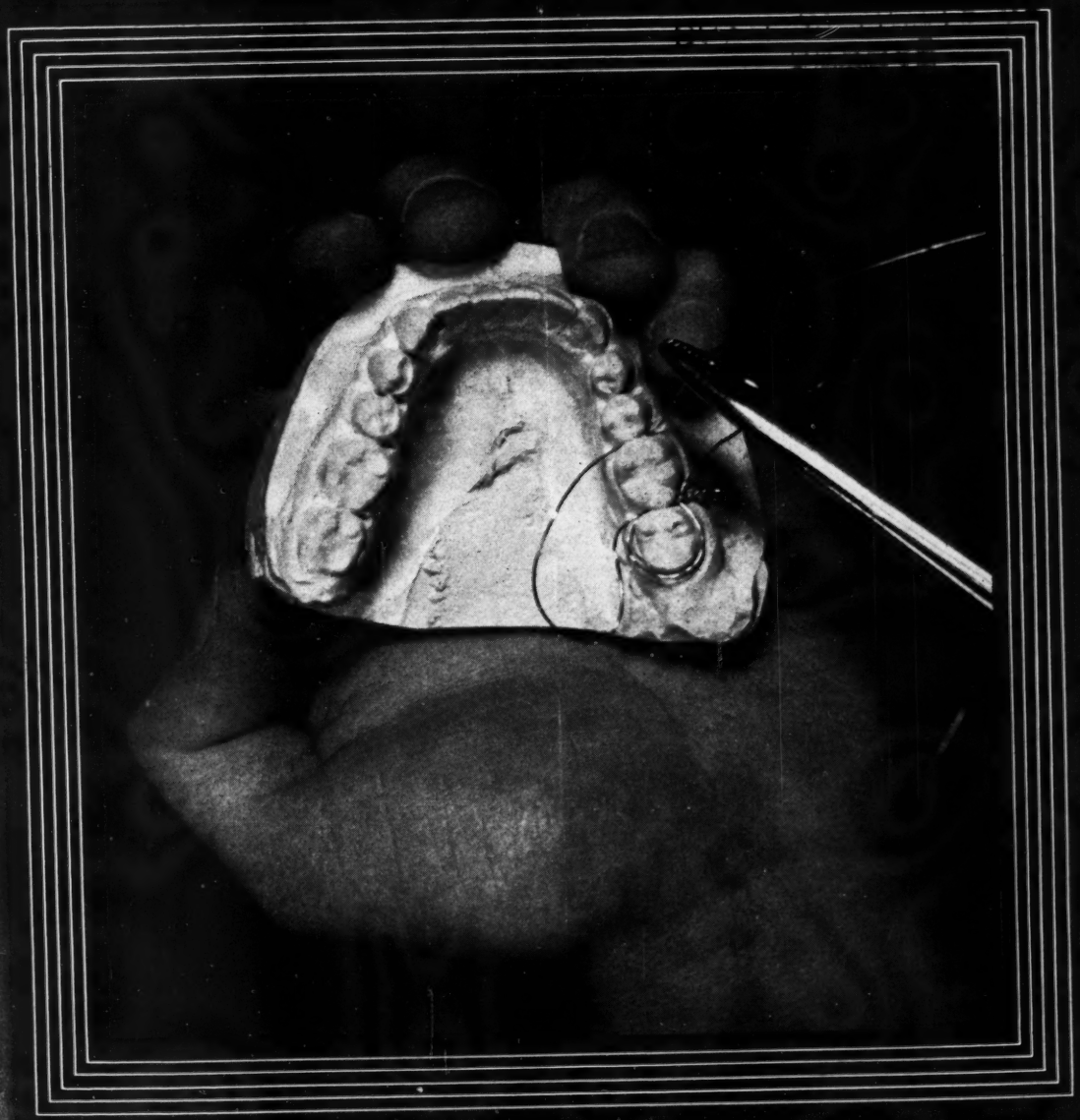
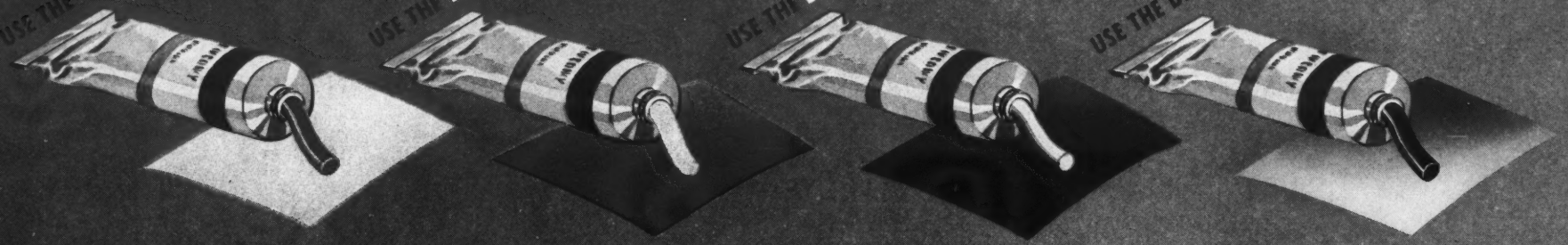
DENTAL





The Veri-chrome Color Guide is sensibly arranged. It is a simplified "yardstick" to measure color and saturation of tooth colors.

Evan the untrained can match tooth colors expertly by using the quick and easy method of contrast-comparison built-in the Veri-chrome Color System.

How can system be substituted for guesswork? We know that all teeth are basically yellow . . . some are madified or tinged with red. Therefore on the Veri-chrome Guide, the dominantly yellow tooth colors are arranged progressively by intensity of saturation—and identified accordingly by numbers from one to five. The "red" series is segregated in the same manner.

With this intelligent arrangement it is possible to select tooth colors quickly and expertly by the contrast-comparison method.

For Example: If the natural tooth appears "yellow", compare it with one of the "red" series. If the tooth is yellow, it will appear more intense by contrast. If the natural tooth is tinged with red, no contrast will be shown. The same procedure is used if the tooth is originally thought to be tinged with red.

When basic color is determined, we next test for correct saturation by the contrast-comparison method. Use the light to see the dark, use the dark to see the light. If the natural tooth is judged to be comparable to Y/2, check it with Guide teeth Y/1 and Y/3. If the natural tooth is darker than Y/1 and lighter than Y/3, then Y/2 is proved the correct selection.

Tooth color selection by contrast-comparison is possible only with the Veri-chrome Color Guide because of its systematic arrangement of colors in progressive saturations . . . and because Veri-chrome colors have controlled color brilliance.

THE SATURATIONS OF THE DIAGRAMMATIC ILLUSTRATIONS ARE INTENSIFIED FOR EASIER PERCEPTION. THEY DEMONSTRATE THE PRINCIPLES INVOLVED IN THE CONTRAST-COMPARISON SYSTEM OF TOOTH COLOR SELECTION.

Veri-chrome

tooth colors now available in

FIVE-PHASE ANTERIORS ANTHROTOMIC ANTERIORS DR. FRENCH'S POSTERIORS
NUFORM ANTERIORS AND POSTERIORS

UNIVERSAL DENTAL COMPANY • 46TH ST. BROWN STREET • PHILA. 39, PA.

UNIVERSAL DENTAL COMPANY • 48TH ST. BROWN STREET • PHILA. 39, PA.
FIVE-PHASE ANTERIORS ANTHROTOMIC ANTERIORS DR. FRENCH'S POSTERIORS
NUPOINT ANTERIORS AND POSTERIORS

THE DENTAL Digest

VOL. 52 NO. 2

February 1946

Impacted Third Molars and Their Sequelae, *Joseph B. Jenkins, D.D.S.* 70

The Individual Unit Porcelain Bridge, *Lee Alan Kapilow, D.D.S.* 73

Good Results from Sixty-Year Use of Fluorinated Water (An Abstract) 75

A Study of Body Sensitivity to Dental Infection, *Homer P. Yoder, D.D.S.* 76

Carotid Pressure and the Relief of Headache, *M. F. Ashley Montagu, Ph.D.* 82

Corrective Surgery of the Jaws, *Phillip M. Chernoff, D.D.S.* 83

A Report on the Treatment of Rampant Caries With Parathyroid Extract 89
Harold J. Winkelspecht, D.D.S.

Clinical and Laboratory Suggestions 90
1. A Method of Obtaining Uniformly Sharpened Hypodermic Needles. 2. An Instrument for Applying Acrylic Monomer. 3. An Aid for Polishing Interproximal and Some Gingival Areas. 4. A Holder for a Single X-Ray Film. 5. An Aid in the Identification of Needles. 6. An Aid in Polishing Full Crowns.

The Editor's Page ..... 93 Contra-Angles 102

Recurrent or Suppurative Parotitis (An Abstract) 106

Pulp Management in Deciduous Teeth (An Abstract) 109

Fluorine Content, Hardness, and pH Values of Drinking Water and Incidence of Dental Caries (An Abstract) 112

EDWARD J. RYAN, B.S., D.D.S., *Editor*

RUTH K. BARNHART, *Assistant Editor*

708 Church Street, Evanston, Illinois

We regret to announce that JOSEPH B. JENKINS, D.D.S., died November 21, 1945. Doctor Jenkins received his D.D.S. from the University of Kansas City, School of Dentistry, in 1918. We presented his article on teaching preventive dentistry, SHOWING THE PATIENT, in February 1932. His article in this issue is on IMPACTED THIRD MOLARS AND THEIR SEQUELAE.

LEE ALAN KAPILOW, D.D.S. (University of Pittsburgh, School of Dentistry, 1943) is in general practice. Doctor Kapilow has contributed several practical suggestions to our CLINICAL AND LABORATORY SUGGESTIONS DEPARTMENT. His presentation here is on THE INDIVIDUAL UNIT PORCELAIN BRIDGE.

About Our CONTRIBUTORS

HOMER PETER YODER, D.D.S. (University of Michigan, College of Dentistry, 1913) is a general practitioner. Doctor Yoder reports a STUDY OF BODY SENSITIVITY TO DENTAL INFECTION, and describes his original treatment procedure, a method of eliminating the infection.

PHILLIP M. CHERNOFF, D.D.S. (The Thomas W. Evans Dental Institute, University of Pennsylvania, 1922), who has written several articles for us, last presented SURGICAL CORRECTION OF DENTOFACIAL DEFORMITIES in November 1944. His article this month is on CORRECTIVE SURGERY OF THE JAWS.

HAROLD J. WINKELSPECHT, D.D.S. (Temple University, School of Dentistry, 1927), general practitioner, has contributed previously to the dental literature. He discusses here THE TREATMENT OF RAMPANT CARIES WITH PARATHYROID EXTRACT.

Copyright, 1946, Dental Digest, Inc. See page 60 for Subscription Data, etc. The magazine is mailed on the fifteenth of the month of issue.

Impacted Third Molars and Their Sequelae

JOSEPH B. JENKINS, D.D.S., PASADENA, CALIFORNIA

Roentgenograms and descriptive legends are used to illustrate twenty-four common disorders which frequently are relieved by the removal of impacted third molars. These case illustrations are presented in the hope that we may ultimately induce an attitude of alertness and concern among dentists to the increasing number and the dangers of third molar impactions.

IMPACTION of third molars may be said to be a part of the price we pay for our so-called civilization, and may be expected to increase with our further departure from normal exercises of the jaws. Primitive man used his teeth and jaws for chewing such tough provender as meat, roots, nuts, and grains. Modern man has learned to cut or grind his foods by machinery and to cook it to a soft, pulpy mass until vigorous mastication has become relatively unnecessary. Since then the jaws have become progressively smaller and shorter, which has left less room for the last teeth in the arch to erupt into normal position. This physical evolutionary change due to lessened functional exercise has resulted in a perceptible progressive increase in the incidence of unerupted, malposed, and impacted third molars. The increase in the number of impactions may be, in part, a result of our ability to discover them by roentgenography.

Relationship of Impactions to Constitutional Disorders

By close survey of the distribution of the trigeminal nerve, it is difficult to see how a tooth could be malposed in the jaw without impinging upon *some* branch of the nerve from which impulses may radiate or, by reflex, be manifest at some distant, apparently unrelated, point. Absence of pain in the region of the third molar is not proof that no tooth is present. (Local

Fig. 1 — Pericoronitis: Inflammation, redness, pain, swelling, around erupting tooth, due to crowding and uncleanness. Extraction done for safety, comfort, and sanitation.

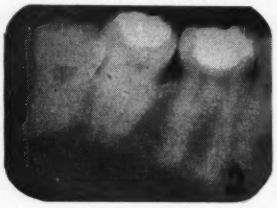


Fig. 2—Muscular Trismus: Locking of jaws, with great pain and swelling; handicap to treatment or removal. Extraction should be done before this happens.

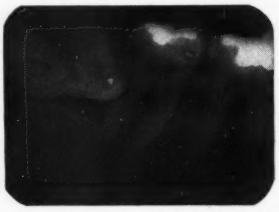


Fig. 3—Pressure Atrophy: Third Molar pressing against second acts as food trap; induces pain, predisposes to caries and loss of irreplaceable second and opposing molars.

Fig. 4 — Neuritis: Inflammation of nerves infected by sepsis from area about unerupted third molars; injures nerve tissue elsewhere in body, inducing neuralgia.

Fig. 5—Neuralgia: Neuralgia, vague in nature, affecting the head, neck, arms, or shoulders. The pain is referred from the pressure on the trifacial nerve branch.

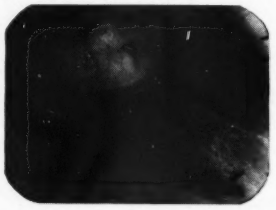


Fig. 6 — Pain and Discomfort: Sore areas under dentures result in dissatisfaction and make-overs. Roentgenographic examination for unerupted teeth and roots advised before taking impressions.

Fig. 7 — Trifacial Neuralgia: Sudden, sharp, darting pains in the jaws, temples, side of head, and inside the ears, simulating migraine.

Fig. 8 — Headache: Pain induced by nerve tension due to pressure on dental nerve trunks being referred to central nervous system; often diagnosed as brain tumor and treated as such.

discomfort was present in only *four* of the twenty-four cases presented here.)

Thousands of patients have unerupted third molars which doubtless are causing constitutional disorders without the patient's knowledge that a tooth is even present. This often explains why chronic disorders fail to yield to treatment until the cause is removed, after which nature, unassisted, frequently effects a cure.

Childbirth and eruption of fully formed teeth are comparable in that both are perfectly normal functions. Delay or failure of childbirth is *ab*normal and a highly potential danger, requiring surgical aid. Failure of a fully formed tooth to erupt may be likened to a mature baby that cannot be born and requires surgical intervention.

We may not be able to prove conclusively that there is a relationship between impacted third molars and constitutional disturbances, but we do know that a high proportion of the cases described here improved promptly or recovered completely following removal of the offending tooth or teeth. Many of the conditions that resist long and skillful therapeusis respond most gratifyingly on removal of the malposed, useless teeth.

Most of the cases illustrated here can be duplicated hundreds of times from the case files of almost any oral surgeon or general dentist. Surgical removal of these teeth is not projected as a cure-all for these twenty-four disturbances, but, in the light of the recorded results following their removal, we feel confident in saying that until and unless this is done not all the potential causative factors have been eradicated.

Functional disorders without a demonstrable physical lesion, unfounded anxiety, fear, uneasiness, restlessness, and stubborn resistance to all therapeutic measures, should suggest to the medical profession that the dental field should be surveyed carefully for possible sources. An all too common picture is that of a pa-

Fig. 9 — Paresthesia: Numbness and prickling sensations in the arms and the hands, resulting in a regional paralysis.

Fig. 10 — Hyperesthesia: Extraordinary sensitivity, or pain to touch, of the upper extremities due to pressure on the inferior dental nerve being reflected to arms and hands.

Fig. 11 — Regional Motor Paralysis: Paralysis of extremities induced by reflex from impingement on dental nerve. (Motor paralysis of both arms and legs disappeared after removing four impacted teeth.)

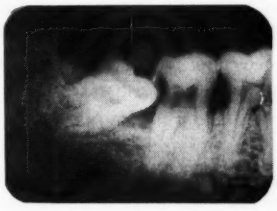


Fig. 12—Malocclusion: Irregularity and malocclusion of the teeth impaired mastication, inducing early onset of periodontitis. May undo previously done orthodontic treatment.

Fig. 13—Periodontitis: Predisposed by alveolar pressure atrophy, and the result of impaired circulation and the difficulty of cleaning due to the inaccessibility of the area.

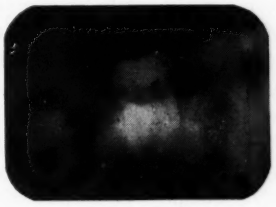


Fig. 14—Cyst: Weakening of the mandible or invasion of the maxillary sinus by progressive cystic enlargement; generally is painless and unsuspected, but dangerous.

Fig. 15—Vincent's Infection: Infection the result of chronic irritation and an insanitary condition about the tooth. There is a constant danger of re-infection.

Fig. 16—Impaired Vision: Reflex from dental nerve to nerves of eyes; frequently baffling to optometrists and ophthalmologists attempting to correct vision by lenses or treatment.

Fig. 17—Defective Hearing: Associated with dental pressure and affecting tympanic nerve from gasserion ganglion. Removal of tooth frequently alters and occasionally improves hearing.

Fig. 18—Menstrual Disturbances, Hysteria, and Acute Gastritis: Possibly due to reflex on pneumogastric nerve to viscera. Sensational recovery known to follow extraction, only treatment.

Fig. 19—Focal Infection: Absorption of toxins and sepsis from other diseased areas. Removal of impaction advised for reasons of mouth hygiene and general health.

Fig. 20—Inability to Concentrate: Poor memory and inability to concentrate as a result of reflexes to the central nervous system; results in low scholastic grades.

Fig. 21—Dentophobia: Abnormal fear of dental operations due to lowered nervous energy by the constant pressure and impulses referred to the central nervous system.

tient who has been partly examined, diagnosed, and treated, with little or no results except partial and temporary alleviation of his complaints, who goes from one to another seeking relief. As a last resort the patient is referred for a dental examination, which generally reveals some contributory, if not the entire, source of the trouble. Why do we not make dental examination the *first* item on the list inasmuch as records show that in this field is found a great number of the causative factors of discomfort in ill health? It is because we, the dental profession, who so frequently encounter these conditions, are doing so little to inform the other members of the related healing arts and the public of the possibility of the causative factor being in the third molar area.

Another reason for the public's indifference to the presence of impacted third molars is that some members of our profession are still shrugging off the matter with the advice, "Just leave them alone as long as they don't bother you." They mean, no doubt, "so long as there is no actual pain in the third molar area." There are four reasons why many dentists give this advice:

1. They are not fully aware of the numerous and varied disturbances and pains that may be caused by unerupted third molars.

2. Those dentists who are untrained or unequipped to remove these teeth hesitate to undertake an operation, the successful completion of which might be doubtful.

3. Some dentists, hesitating to undertake extraction, fear they might "lose face" if they referred the case to someone better equipped for the operation.

4. Having a natural tendency to safeguard the welfare of their patients but, being aware of the many reasons for removal of impacted third molars, they dislike to subject their patients to the necessary surgery and expense.

Being unable to foretell with absolute certainty the outcome of any surgical operation or a patient's reaction to surgery, we should never employ persuasion, "salesmanship," or promises of benefits to influence the patient. As doctors, we can only *prescribe* an operation, promise nothing, since only God and nature can effect a cure once the cause of the trouble is removed. Removal of a cause does not always correct the damage it may have done, another reason for *not* "leaving it alone so long as it isn't a bother." An example of this is case number 17, in which the patient's deafness definitely was altered by removal of impacted teeth, but was *not* relieved. Treatment a few years earlier might have done so, or prevented it altogether. What if removal of a

Fig. 22—Neurosis: Functional disorders without demonstrable physical lesions, anxiety, fear, hysteria, mental disturbances. Tooth pressure on nerve trunk acts as foreign body.

Fig. 23—Neurasthenia: Nervous exhaustion, weakness, sleeplessness, simulating organic diseases. Pressure on nerve trunk reacts on central nervous system; frequently relieved by extraction.

Fig. 24—Insanity: Influenced by long-continued nerve irritation combined with other causative or predisposing factors. Several border-line cases promptly recovered following extraction.

third molar fails to relieve a complaint? Then the patient has merely been relieved of a *useless* potential menace that must be removed eventually anyway.

I believe that the welfare of the general public, and closer interprofessional cooperation, will be promoted if the general physicians and surgeons, psychiatrists and neurologists, ophthalmologists and otologists, internists and general diagnosticians, as well as dentists, are informed and frequently reminded of these facts.

65 *North Madison Avenue.*

The Individual Unit Porcelain Bridge

LEE ALAN KAPILOW, D.D.S., NEW YORK

The advantages of the use of an individual unit porcelain bridge in the restoration of missing anterior teeth are listed, and the technique for the construction of the bridge is described.

WITH SO many of our patients becoming increasingly fastidious about the appearance of their teeth, the problem of esthetic restoration of missing anterior teeth assumes monumental proportions today. Of the fixed, short-span replacements, the appliance which most completely meets the esthetic demands and also fulfills all the other requirements of a satisfactory restoration is the individual unit porcelain bridge.

Although this type of bridge is not new, the present increased use of it (probably due to the public's ability and inclination to pay for what formerly was considered a "luxury") makes a description of the technique of construction decidedly in order. Briefly stated, the bridge consists of thin metal copings on the abutment teeth, to which are soldered metal stumps to supply the edentulous space. Over these copings and stumps are placed properly carved and shaded individual porcelain jacket crowns.

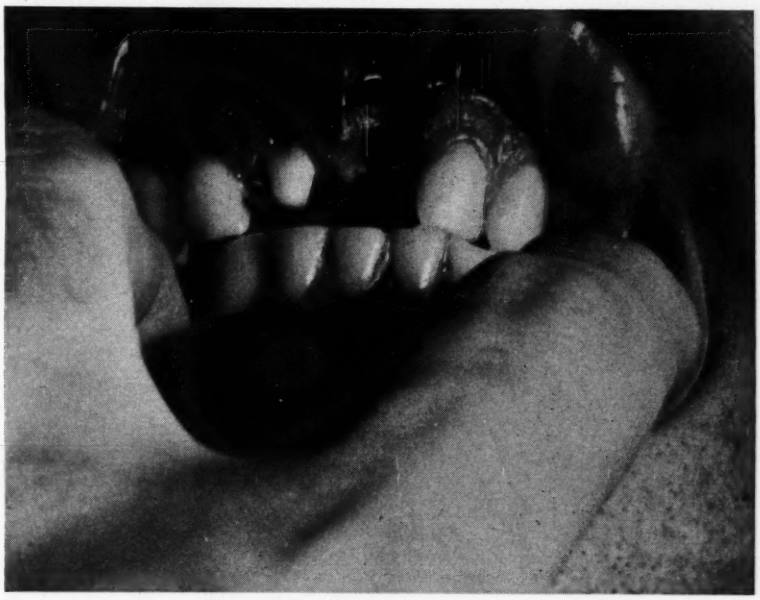


Fig. 1—The preparation of the right central incisor as an abutment tooth.

Advantages of the Bridge

1. The porcelain jacket crowns impart a highly esthetic appearance.
2. The natural embrasures provided are unlike those seen in all-porcelain or all-acrylic bridges.
3. The retentive qualities are great in that full coverage of the abutment teeth provides maximum frictional grip.
4. The abutment teeth are well protected against thermal shock by a double layer of cement and the lack of conductivity of baked porcelain.
5. The gingival tissues are not affected by glazed porcelain and maintain their normal tone.
6. Repair, in the event of breakage, is relatively simple inasmuch as duplicate models of the copings and stumps are provided. This makes complete removal of the bridge unnecessary, as would be the case in an all-porcelain bridge or an acrylic bridge with a metal frame in which the acrylic is processed directly to the metal.
7. There is no tendency of the porcelain to spread and warp as is possible with acrylic.

The obvious disadvantage in this type of bridge lies in the necessity for maximum cutting of the abutment teeth. This is obviated to a great degree, however, by the fact that all margins are advantageously placed in relatively caries-immune areas, below the free gingiva.

Technique

The following text and illustrations describe the construction of a bridge which replaces a missing upper left central incisor. In this case a favorable bite and the strength of the right central incisor were among the indications that prompted the use of only one retaining abutment with a supporting lug on the left lateral incisor. When the usual two or more retaining abutment teeth are used, the same method of construction is followed.

1. The right central incisor is prepared as for a porcelain jacket crown except that a trifle more tooth structure is removed to allow for the thickness of the coping (Fig. 1).
2. A copper tube impression and a wax bite are taken, an amalgam die is packed, and the case is articulated by means of an indexed "tailpiece."
3. A heavy platinum matrix is

Fig. 2—The completed gold frame and its mirror image, showing the shoulder, the supporting lug for the lateral, the soldered joint, and the platinum tissue contact area on the gingival of the stump.

Fig. 3—The frame in place in the mouth. Note the extension of the coping below the gingiva, the close adaptation of the stump to the tissues, and the inconspicuous soldered juncture.

adapted carefully to the die, trimmed, and removed, and pure gold is sweated to it. The pure gold later aids in establishing a firm juncture between the matrix and the cast gold coping. The matrix is returned to the die, and over it is carved a thin wax coping model. A full lingual shoulder which runs partly into the proximals is used. A small wax spur is added on the proximogingival toward the edentulous space. This will be used later as a soldering point between the coping and the gold stump. The coping is invested and cast in a hard gold and returned to the die for trimming.

4. The trimmed coping is then brought back to the mouth and checked for fit and occlusion. A plaster impression and wax bite are then taken with the coping in place. The case is again articulated with a "tailpiece."

5. A strip of platinum foil is burnished over the edentulous space on the model, and removed, and pure gold is sweated to it. The platinum is returned to the model, and over it is carved a wax stump with a full lingual shoulder running into the proximals. A small spur similar to the one used on the coping is waxed to the proximogingival along with a lug to rest on the cingulum of the left lateral. The wax stump and lug are invested and cast in a hard gold (Fig. 2).

6. The casting is recovered, trimmed, and set on the model to check position. If accurate, the stump and coping are waxed together, removed, and invested. At the point of juncture of the two gingival spurs, a strong soldered joint is made (Fig. 2).

7. After trimming and polishing, the completed frame is tried in the mouth to check for fit and occlusion (Fig. 3). If satisfactory, it is returned to the model for duplication before proceeding with the porcelain jackets.

8. To duplicate the frame, individual copper tube impressions are taken of the coping and stump. These are packed in amalgam. A labial and lingual plaster index is then made of the gold frame in place on the model. The lingual index should include all the "tailpiece" for future articulation with the original countermodel. When

the amalgam dies are recovered they are placed in the assembled index and the stone model is run into it. Upon separating, the old countermodel will be found to fit perfectly into the new "tailpiece," inasmuch as the plaster index reproduces the original model exactly.

9. The final step consists of the construction of the individual porcelain jackets for the coping and stump, which, of course, must be properly shaded and carved. To assure proper butting of the dummy to the tissues, the labiogingival on the model can be scraped slightly before adapting the platinum foil to provide compression.

10. The completed bridge is tried in the mouth to observe the fit, shade, and bite. The occlusion should be checked in all excursions of the mandible with the use of articulating paper, and cleared as completely as possible. This step is of paramount importance in all porcelain jacket construction and should be carried out thoroughly even if it entails grinding the lower incisors.

11. Various shades of cement mixed with water are tried under the jackets to determine which provides the best esthetic result. Often the appearance of a bridge is changed completely if the wrong shade of cement is used. When the proper color is decided upon, the frame is first cemented to place and then is followed by the jackets. A careful check is again made of the bite, after which the excess cement is removed and the patient is dismissed (Fig. 4).

Fig. 4—The finished bridge in place. Note the natural appearance of the embrasures and the close adaptation of the pontic to the tissues.

In the event of breakage of either of the jackets, all that is required is to take a plaster impression and wax bite of the remainder of the bridge in the mouth. A new jacket is constructed on one of the duplicate dies and is cemented to place without disturbing the rest of the bridge. If both jackets are fractured, new ones are made on the duplicate dies and cemented over the undisturbed frame.

7 *West Ninety-Sixth Street.*

Good Results from Sixty-Year Use of Fluorinated Water

Doctor Frederick S. McKay, one of the pioneer students of the effects of fluorinated water on caries experience, recently reported findings on 100 persons, average age 25 years, who had maintained continuous residence in Colorado Springs, Colorado, which has a water supply containing 2.6 parts per million fluorine. Of these 100 persons, thirty-five, of an average age of 21, had never had caries. The youngest person in the group was 11 years old, the eldest 60. The average number of carious areas in these 100 persons was 2.8; the loss of teeth from caries was negligible.

Doctor McKay noted that what caries did occur in these people was found almost entirely in the pits and fissures of molars. The acidophilus count in the mouths of fluorine water users was markedly lower than in the mouths of people using fluorine-free water.

There was a close correspondence between findings in this study and findings of the United States Public Health Survey of the same community. The age group in the earlier report was 12 to 14 years, while in the McKay report it is 25, about double the time of exposure to fluorinated water. The earlier report showed 28.5 persons per 100 with no caries as compared with 35 in the later report, even after the longer exposure. "A reasonable interpretation of this phenomenon," says Doctor McKay, "seems to be that the beneficial influence of fluorine as exerted against the decay process, having once been conferred, remains permanent and is not subject to diminution."

—From *The Bulletin of the American Association of Public Health Dentists* 5:17 (November) 1945.

A Study of Body Sensitivity to Dental Infection

HOMER P. YODER, D.D.S., Cleveland

Many patients in the past have received only temporary relief following the extraction of infected teeth; and many patients' conditions became worse after the infected teeth were removed, indicating that these teeth may have had a protective value. Teeth with vital pulps often show pulp degeneration, which is caused by bacteria of low virulence. These low-virulent bacteria are not confined to the pulp but extend to the periapical space and from there are forced into the narrow spaces of the alveolar bone surrounding the tooth. Toxins are thrown off by the bacteria, toxins to which the host may become allergic (sensitive). Many nonspecific chronic diseases are believed to be caused by a sensitivity. After extraction of the tooth, the bacteria remain in the bony process and continue their sensitizing action.

The original treatment procedure described here is in the method of elimination of the infection. In no other place in the body could this unique type of infection occur. The operating procedure described is entirely different from those previously used. The curet is not used to remove the infection in its entirety, but to expose the infection to oxygen and to restore its virulence so that the defense mechanism of the body may act. It is by stimulating this natural defense mechanism that antitoxin is formed which produces the desensitizing effect. A large percentage of patients receive lasting relief from their symptoms following this treatment.

FOR MANY years, patients suffering from nonspecific chronic diseases have been known to experience relief following removal of infected teeth. This stimulated dentists to extract all infected teeth in an attempt to "cure" these ailments. But in the long run the results were disappointing. All too often the relief was only transitory and many of the patient's symptoms returned with more severity.

Because of the transitory beneficial response, it seemed reasonable to suppose that the teeth must be a causative factor in these processes. Therefore, in further efforts to help the patient, all pulpless teeth were removed. Frequently this was beneficial, but again the results were unsatisfactory in the long run. Thus, if these symptoms were traceable to the teeth at all, they must have been related to the teeth which were always considered

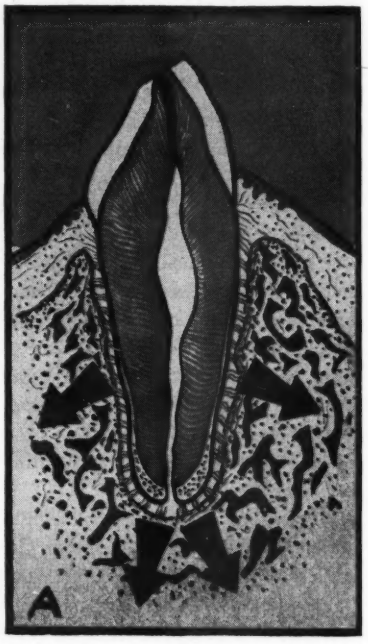


Fig. 1A

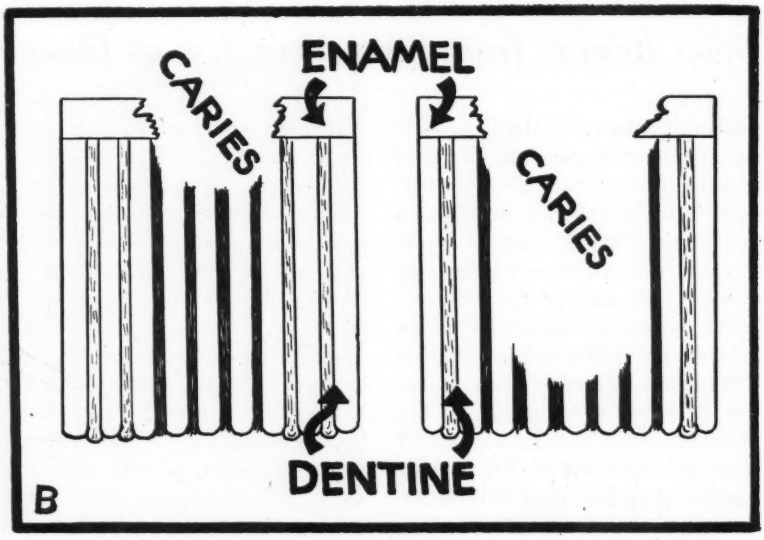


Fig. 1B

Fig. 1—*(A) Cross section of tooth, showing incisal wear and dental tubules open to forces of mastication. Arrows show ramming action of tooth in socket. (B) Sections of carious dentine. Bacteria forced through the longer dentules on the left would be more highly attenuated than any forced through those on the right.*

healthy. Warner[1] gave undisputable evidence that the pulps of apparently vital teeth were infected.

If by the extraction of these teeth, a cure was effected, then the teeth were considered to be the offenders; if no relief was effected, the cause was thought to be elsewhere. In reality we thus have eliminated only the infection that was in the teeth and not the infection that had been forced into the surrounding area by the forces of mastication. Today we know that the invading organisms are not confined to the pulps but reach the investing tissue, where they remain.[2, 3] The mode of entry for these organisms into the surrounding areas can be traced from the mouth proper through the exposed dentine, the pulp, the periodontal membrane, and into the surrounding bone (Fig. 1). Inasmuch as the dental tubules are from three to four times the diameter of the organisms of the mouth, the bacteria and other microscopic debris are easily driven into and through the tubules by the forces of mastication (Fig. 2). It has been shown that dental tubules under healthy enamel are stained easily with dye, whereas under carious enamel no dye can be forced down the tubules. This would indicate that the tubules are packed tightly with foreign matter. The path of organisms and debris can be traced by the characteristic cone-shaped stain that shows up so clearly when teeth of this kind are split open (Fig. 3).

The fact that patients so often experience relief after the removal of infected and pulpless teeth is good evidence that these teeth represent foci of infection. These foci may manifest themselves as various nonspecific chronic diseases. The transitory nature of the relief shows, however, that the focus of infection has not been removed completely; therefore, a new method of treatment has been devised which makes removal complete. Experiments with this method were so encouraging that its description and a report on the results obtained seems justified.

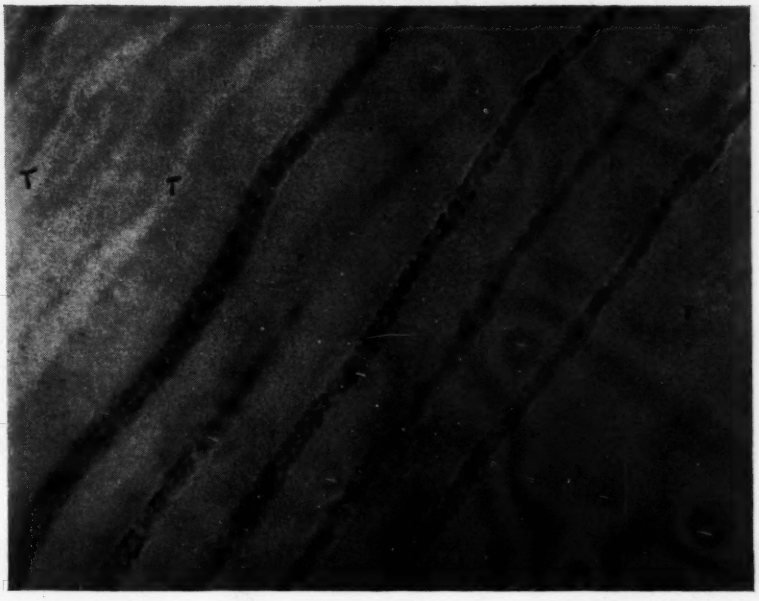


Fig. 2—Pioneer bacteria invading the dental canals in unaltered dentine. Areas marked T are unaffected dentine.

Clinical Symptoms

A careful dental history is taken and thorough oral examination is made in patients with various nonspecific chronic diseases which have not responded to the usual methods of treatment. The following clinical signs and symptoms of the infected teeth and edentulous areas which serve as foci of infection may be noted:

Teeth with Vital, Degenerating Pulps—1. History of tooth:

a) Occasional soreness.

b) Great deal of pain experienced during process of restoration.

c) Dull, annoying feeling.

d) Tenderness on mastication.

2. Gray, lifeless appearance.

3. Slight tenderness on percussion.

4. Electric or thermal test may show either hyposensitivity or hypersensitivity.

5. Under transillumination with light of low intensity, the tooth and its alveolar tissue appear cloudy.

6. Roentgenographically the tooth may show:

a) Calcifying pulp (pulp stones or excessive formation of secondary dentine).

b) Thickening of the lamina dura or of the walls of the trabeculae.

c) A break in the continuity of the trabeculae around the apex of the tooth.

d) Hypercementosis of the root.

Infected Edentulous Areas—1. Irregular and nodular alveolar ridge.

2. Tender areas, especially under dentures.

3. Smooth, minute, gray, polypoid masses, usually on the buccal side of the alveolar ridge.

4. Smooth granulations, usually found over the sockets.

5. A convex or concave pinwheel effect of the tissue, 2 to 3 millimeters in diameter, with a pinpoint opening in the center.

6. Roentgenographically the areas may show:

a) Absence of or broken continuity of the cortical plate (A in Fig. 4).

b) Furry appearance of bone wherever the cortical plate is absent (Fig. 5, center).

c) Decalcified, abnormally striated or mottled trabeculae (A in Fig. 6, and A in Fig. 7).

d) Sclerotic areas (C in Fig. 8).

e) Fistulae leading from the former depth of a socket to the forementioned pinpoint opening.

[1]Warner, G. R.: The Pathologic Vital Tooth, With Report of Cases, J.A.D.A. 29:1791 (October) 1942.
[2]Haden, R. L.: Dental Infection and Systemic Disease, ed. 2, Philadelphia, Lea & Febiger, 1936, page 30.
[3]Murry, M., and O'Ferrell, E.: A Bacteriologic Check on Residual Dental Infection, J. Lab. & Clin. Med. 27:154 (June) 1942.

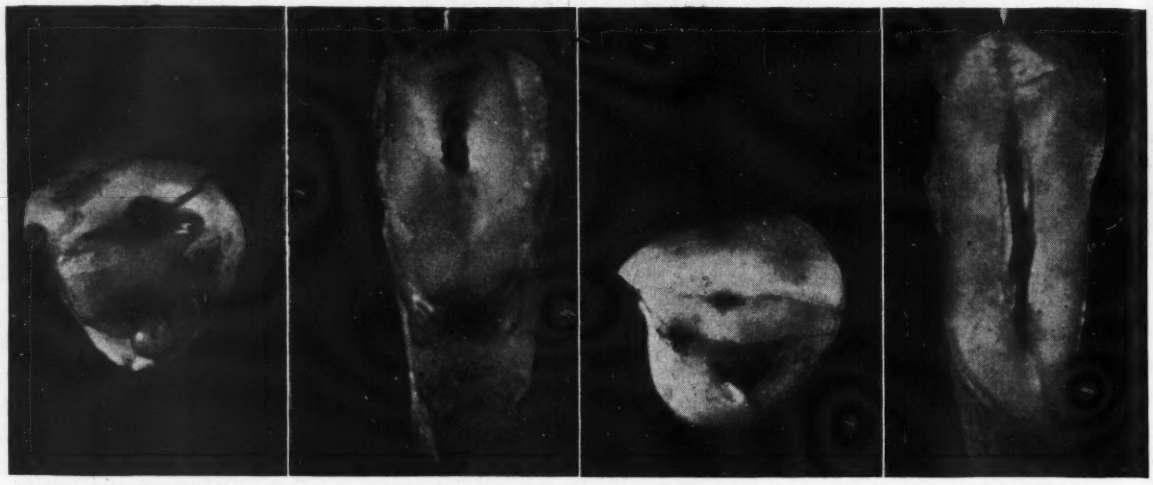


Fig. 3A *Fig.* 3A¹ *Fig.* 3B *Fig.* 3B¹

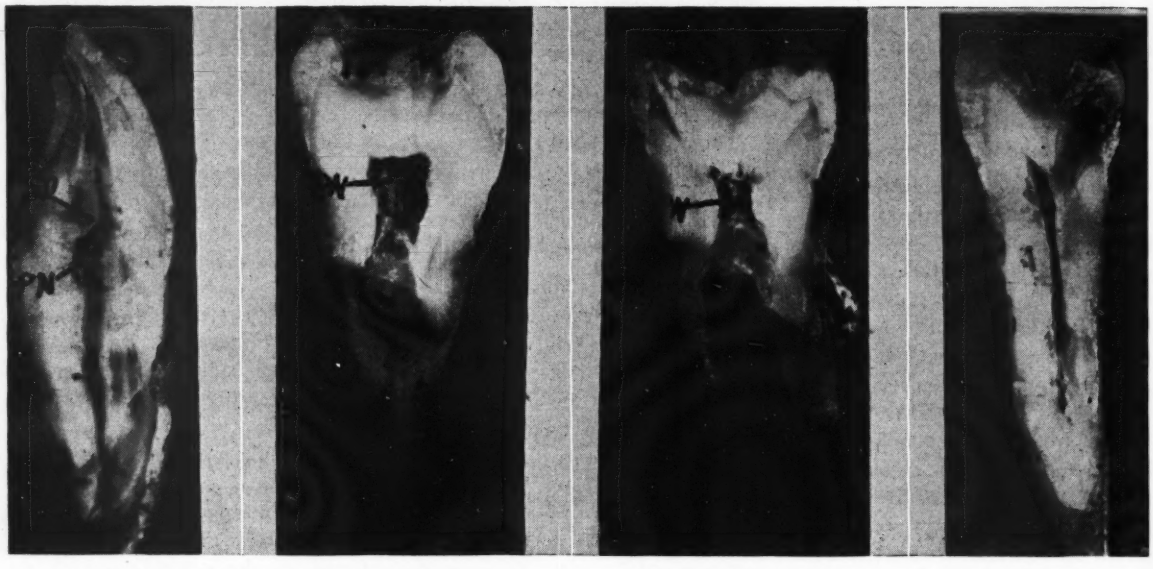


Fig. 3C *Fig.* 3D *Fig.* 3E *Fig.* 3F

Fig. 3—(A) and (B), upper cuspids split open after extraction, show exposure of dentine due to erosion of enamel. (A¹) and (B¹), same teeth, show staining of dentine to pulp chamber. (C) Upper central with exposure of dentine at incisal edge, stained dentine extending to pulp chamber. (SD, secondary dentine; PN, pulp nodule.) (D) Molar with no caries, but with flaws in enamel permitting staining deep into dentine and degeneration of pulp. (E) Molar with small caries, but with pulp nodule and deep staining of dentine. (F) Bicuspid with more caries and stained dentine than (E); no degeneration of pulp is seen, showing that depth of caries has no relationship to pulp nodules.

f) Retained lamina dura (A in Fig. 4).

g) Retained roots.

These teeth and areas should be treated. In most cases unhealed edentulous areas are to be treated first. If there are any unhealed edentulous areas in the mouth there is no need to extract more teeth until the areas of infection have been eliminated. The method of treatment following extraction and the treatment of the unhealed areas are identical.

Treatment Technique

1. At the first treatment only one of the involved teeth is removed or one of the involved edentulous areas opened and curetted. If a tooth is extracted, care is taken to cause as little trauma as possible and the blood clot is allowed to form undisturbed. The patient is then dismissed for a period of a week or ten days.

2. At the second visit the patient invariably will give a history of a generalized reaction. This reaction may be slight or severe, depending on and directly in proportion to the degree of attenuation of the disturbing bacteria. On careful examination of the socket it will be found that it is not healing, but that the blood clot is breaking down and granulation tissue is present.

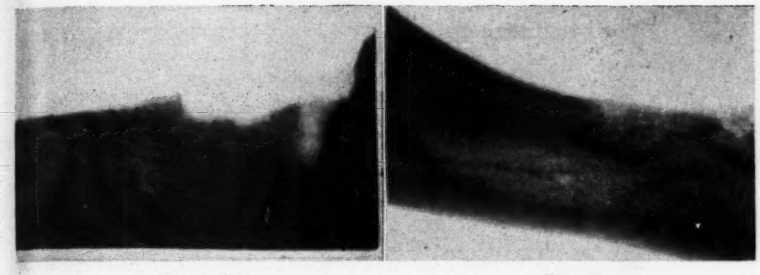


Fig. 4A *Fig. 4B*

Fig. 4—(A) Roentgenogram of molar and bicuspid regions of mandible of patient with multiple arthritis. Note unhealed socket of first bicuspid, root of second bicuspid, and rarified area in region of first molar. (B) Roentgenogram of same area after treatment. Other areas also were treated. Patient obtained about 90 per cent relief.

3. The area is then anesthetized and all the granulation tissue is removed by curettement. The socket is examined by visual and instrumental means to determine the location and extent of diseased bone. All areas of abnormal bone are then removed. The sockets are packed with *wet* dressings and the patient is dismissed for forty-eight hours.

4. On return of the patient, the dressing is removed and the socket is irrigated with an isotonic saline-bicarbonate solution. A moist dressing again is placed into the socket, and the patient is dismissed for another forty-eight hours.

5. At subsequent treatments any granulation tissue or involved bone that has formed in this area is removed by curettement, followed by irrigation and packing. These procedures of curettage and irrigation are repeated until a smooth epithelial lining has formed. The area is kept free of blood by gauze dressing to prevent clotting and to permit oxygen to reach the bacteria in the bone. Epithelial lining will form over the bone under the gauze dressing only if there is no diseased bone. When the socket is covered with tissue, the dressing is discontinued.

6. The area is kept under observation for a week or more. If the lining neither breaks down nor becomes edematous or inflamed at a later date, one can be confident that all the infected tissue has been removed. If the lining becomes inflamed, bleeds easily, or is tender, however, the treatment must be continued. It is of utmost importance that all infection be eliminated. Remaining infection, no matter how small in amount, will act as a sensitizing focus, and the sensitizing action seems to be greater in an area that has been opened but not properly healed than in an infected area that never has been opened. The tissue is considered free from infection only when normal mucous membrane regenerates.

7. After treating one or two areas, the patient may feel completely "cured." If the symptoms should recur, the other involved areas or teeth will have to be treated in the forementioned manner.

Study Findings

The following are the results of studies made of 396 patients treated over a period of twenty-five years:

Chronic Fatigue—Of 256 patients, 249 reported great improvement in their general well-being, and their "dead tired" feeling had disappeared. Seven patients reported no relief.

Rheumatism—Of 229 patients, 151 received complete relief. Seventy reported partial relief, and 8 reported no relief. (No attempt was made to classify, nor were restrictions made on, the different types of rheumatism; all patients received the same treatment, with results as shown.)

Chronic Headaches—Of 135 patients, 128 received complete and permanent relief; 5 were relieved for a period of several months and then had recurrence of the chronic headaches. Two patients received no relief.

Asthma—Of 11 patients, 7 of whom used adrenalin, one received no relief, 2 experienced partial relief, and 8 reported no return of their symptoms.

Dermatologic Conditions—Of 12 patients, one received relief for a time but the condition returned about six months later in a milder form; 11 patients received complete relief.

Prostate Conditions—All seven patients reported complete relief.

Twelve of the 396 patients reported amelioration of their cardiac symptoms, and 61 reported great improvement in disorders of the gastrointestinal tract. Virtually every patient reported that the number and severity of his colds were noticeably decreased following this treatment.

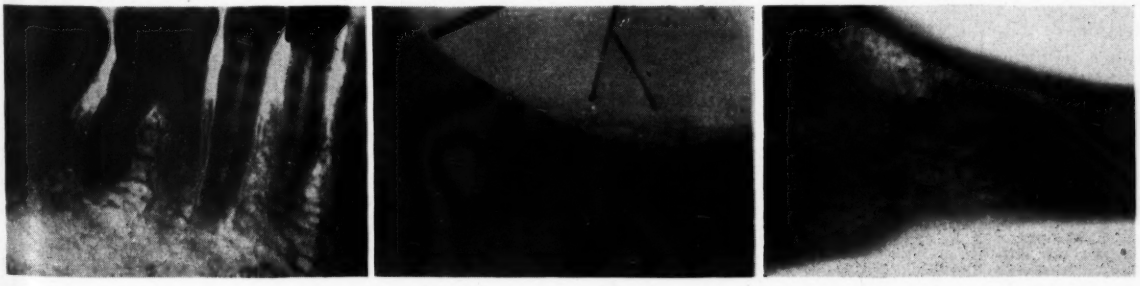


Fig. 5—Left: Roentgenogram of right mandible before extraction. Patient complained of asthma, rheumatism, headaches, and tired feeling. Center: Same areas two years after extraction. Bone in area crumbled in the operation, and only the two cortical plates remained. Right: Roentgenogram of same area eight months after treatments were completed. Condition improved remarkably.

Theory of Bacterial Invasion

It is well known that a person can become sensitized to the toxins of an invading organism.[4] Many authors believe that the nonspecific chronic diseases are caused by just such a sensitivity. Eaton[5] states: "The condition is not so much one of infection as it is a reaction to infection. The emphasis belongs not on the specific organism, but on the specific reaction." If a person is experiencing a chronic disease as a result of a sensitivity to the toxins of an invading organism, he is subjected to a chronic exposure of that toxin and his body defenses are unable to produce sufficient antitoxin.

Most bacteria undergo a change of virulence upon change of environment. When subjected to an unfavorable environment, the bacteria become less virulent, and when the environment becomes favorable their virulence returns. The system has little or no defense against highly attenuated forms of bacteria, but the toxins they produce may well have a sensitizing effect. It is the prolonged absorption of these low-virulent toxins, which have lost their antigenic powers, that causes the chronic symptoms. It generally is acknowledged that a chronic infection from any source sooner or later may lead to a state of allergy.[6]

Thoma[7] states: "Research and clinical observations carried on for the last two years have disclosed that chronic infection of the pulp of so-called vital teeth is a particularly potent source of infection." Any pit, fissure, or wear of the enamel that exposes the dental tubules places that tooth in as vulnerable a state of infection as a tooth with caries.[8] The same condition prevails when large areas of cementum are exposed. The forces of mastication drive the bacteria normally found in the mouth into and through exposed dental tubules to the pulp. The invading organisms are not confined to the pulp, but work down into the periapical space. The tooth then acts as a ram and drives the bacteria into the bone cells within a relatively large area about the apex of the tooth.

Bacteria, upon entering the dental tubules, encounter a change of environment, the most important of which is decreased oxygen tension. By the time they reach the pulp and investment tissue they may be so attenuated that they cause little or no reaction on the part of the host. These low-virulent bacteria produce toxins without antigenic value. The host becomes sensitized to their toxins and the allergic response which results from this sensitivity may manifest itself as various nonspecific chronic diseases.

The deeper the cavity, the shorter become the tubules through which the bacteria are driven (Fig. 1). This would result in a correspondingly lesser change of virulence. If the cavity is deep enough, the tubules will be so short that the bacteria may

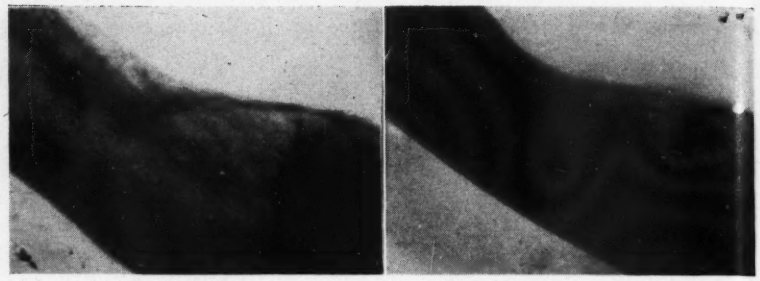


Fig. 6A *Fig.* 6B

Fig. 6—Patient had had multiple arthritis for several years. Right mandible (A) was opened and treated, with results shown in (B). Several other areas also were treated. Patient has had complete relief for eight years.

Fig. 7A *Fig.* 7A[1]

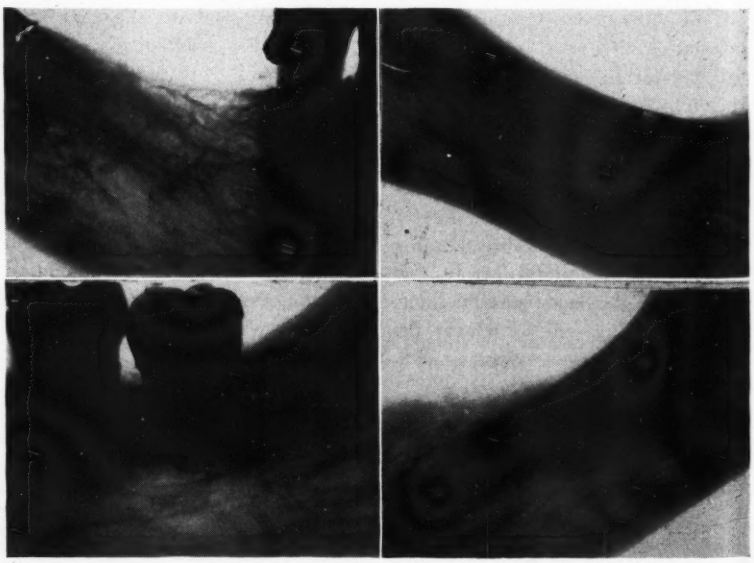


Fig. 7B *Fig.* 7B[1]

Fig. 7—(A and B) Roentgenograms of molar region of mandible of patient who for twenty years had had severe acne of face and arthritic condition of hands. Teeth on the right (A) had been extracted several years previously, leaving the sclerotic and rarified area. This was opened and treated, with the results shown in (A[1]). The left molars (B) were extracted, with complete relief resulting; no further treatment necessary. The acne condition recurred eight years later. (B[1]) shows sclerotic area, condition similar to that shown in (A). Present treatment is resulting in usual rhythmic cycles of improvement.

[4]Appleton, J. L. T.: Bacterial Infection with Special Reference to Dental Practice, ed. 2, Philadelphia, Lea & Febiger, 1933, pages 115, 130, and 131.
[5]Eaton, E. R.: Chronic Arthritis: A Consideration of the Etiologic Factors, J. Am. Inst. of Homeopathy 25:390 (April) 1932.
[6]Row, A. H.: Food Allergy, Philadelphia, Lea & Febiger, 1930, page 211.
[7]Thoma, K. H.: Infected Vital Dental Pulp, Important Focus of Systemic Disease, J. D. Research 9: 529-550 (August) 1928.
[8]Lundquist, C. H. K. H.: Tissue Reactions in the Dental Pulp Due to Caries, Northwestern Univ. Bull. 40:20 (July) 1940.

Fig. 8A *Fig.* 8B *Fig.* 8C

Fig. 8—(A) Roentgenogram of lower left second and third molars. Both were vital, but there was an "uncomfortable feeling" in and about second molar; this was extracted in 1928. (B) Roentgenogram of second molar area immediately after extraction. (C) Roentgenogram of same area two years later, showing sclerotic area. On removal of this area, the usual rhythmic cycles were experienced, with great improvement in the arthritis of the spine.

reach the pulp and investment tissue without having their virulence attenuated. In this way they may cause inflammation and death of the pulp with resultant abscess formation. If the abscess causes a large enough rarifaction at the apex of the tooth, all the low-virulent bacteria previously forced into this area would be eliminated. There would be little or no ill effects from this region, but rather a beneficial effect, due to the increase in body resistance stimulated by the abscess. Pemberton[9] reports, in studying 1100 patients with arthritis, that the incidence of recovery was about three times greater in cases in which the foci of infection were not removed than in those cases in which they were removed. In other words, the abscesses had a high antigenic value. On extraction of the tooth and elimination of the abscess, this stimulated resistance would be lost. This explains the biphasic reaction often experienced after extraction of abscessed teeth. These patients have a remission of their symptoms for some time; afterward the symptoms may become worse.

Theory of Method of Treatment

The principle used in the described method of treating various nonspecific chronic diseases caused by low-virulent bacteria of the teeth and alveolar bone is as follows: Oxygen is permitted to enter the infected areas. This creates a favorable environment for the attenuated bacteria, with the result that the virulence returns. The body defenses are stimulated and an abscess is formed. Antitoxin is produced and neutralizes the toxins which cause the symptom. Consequently the patient will experience relief.

1. A few hours after the first treatment the patient will often experience a remission of the symptoms as a result of the establishment of free drainage. Three to ten days later he probably will have an exacerbation of the symptoms. It has been noticed that following the extraction of teeth with deep caries, the local and general reaction occurs in less time and is more severe than following extraction of teeth with shallow caries. This should be expected inasmuch as the bacteria about the teeth with deep caries have not been driven through as long tubules and, therefore, are not as highly attenuated. For this reason they do not require as long a time to regain their virulence. Apparently the time is almost directly proportional to the length of tubules through which the bacteria have traveled. Appleton[10] aptly explains this reaction thus: "The surgical manipulation of the infected parts has introduced an unusually large quantity of antigens (the bacteria themselves or their toxins) into the circulation. This occasions the general reaction of fever and malaise and the focal reaction at the sites where the infection has become secondarily localized. For example, under such circumstances in an arthritic, the affected joints may become reddened, swollen, and tender."

2. At this time it is not unusual for the patient to remark that he feels as though he were about to have a "bad cold." Locally the clot begins to disintegrate, emitting a foul taste and odor. The unpleasant phenomenon of a dry socket may be evident. The amount of soreness of these sockets varies greatly. These signs are evidence that he body is reacting against infection.

3. In a few days the symptoms begin to abate, indicating that enough antitoxin has been formed to neutralize the toxin. This upward trend continues until the granulation tissue covers the socket, at which time the body ceases to produce antitoxin. The toxin then assumes the upper hand and the patient's condition returns to approximately the original.

4. Granulation tissue forms as a result of tissue reacting to infection. The amount may be so small as to be almost unnoticeable, or it may fill the socket with a large mass of purplish red tissue that bleeds easily and profusely. It is undesirable to permit the formation of a blood clot or granulation tissue to permit oxygen to reach the exposed areas of bone so that the antigenic powers of the bacteria may be restored.

5. The diseased bone found about the tooth sockets and in the edentulous areas may be either abnormally soft or hard. The soft bone appears dark gray. The surface of the bone is rough and pitted. At times, under light pressure, it will crumble with the characteristic feel of breaking eggshells. The hard bone has a dense, white, and homogeneous appearance.

[9]Pemberton, R.: Arthritis and Rheumatoid Conditions, Their Nature and Treatment, Philadelphia, Lea & Febiger, 1929, pages 24-33.

[10]Appleton, J. L. T.: Bacterial Infection, ed. 2, Philadelphia, Lea & Febiger, 1933, page 132.

A bone bur or curet does not readily cut into these areas. A sharp ring is given off as the curet passes over this type of bone. In regard to the cause of these types of bone, Schram[11] says: "Agents producing inflammation in other tissues act quite similarly on bone. Those of the lowest grade act as stimulants, causing the formation of new bone; middle grades are almost always associated with resorption." Antiseptics are contraindicated in the treatment of these sockets inasmuch as they inhibit the antigenic powers of the bacteria by subjecting them to an unfavorable environment.

6. The severity of the secondary reaction, following the curettement of the bone, is in inverse proportion to the degree of reaction which followed the extraction. If the dental tubules through which the bacteria had passed were long, the secondary reaction is severe compared with the primary reaction following the extraction. If the dental tubules were short, the secondary reaction is mild compared with the primary reaction. In the first instance, the bacteria were forced through a longer length of tubules and, therefore, were more attenuated, with the result that more time for exposure to oxygen is required to regain their virulence. The extraction of the tooth introduced only a small amount of toxin into the circulation with only a mild reaction resulting. By the time of the curettement, however, the increased number of virulent bacteria present will introduce an increased amount of antigen into the body, thereby causing the severe reaction. In the second case, in which the tubules were short, the bacteria have lost proportionally less of their virulence, inducing a severe reaction on extraction of the tooth. Thus, the production of antitoxin will be stimulated. The reaction will, therefore, at the time of curettage, be mild.

7. At this time the patient often will experience a definite "pickup," the toxins in the body having been definitely lessened by the neutralizing effect of the antitoxins. This rhythmical pattern of exacerbations and remissions continues to occur as the treatment progresses, but the exacerbations become shorter and less severe and the remissions longer and more complete until finally a complete remission is obtained. If it is necessary to treat other areas, the same cycle of events will be noted; however, the duration of treatment is shorter and the remissions are longer.

5005 *Euclid Avenue.*

[11]Schram, W. R.: Theoretical Consideration of Bone and Tissue Healing in Relation to Oral Surgery, Northwestern Univ. Bull. 40.4-7 (January) 1940.

Carotid Pressure and the Relief of Headache

M. F. ASHLEY MONTAGU, Ph.D., Philadelphia

A RATHER popular theory relating to the cause of headache is that the symptoms of pain are produced either (1) by the dilatation of either or both the cephalic and cerebral arteries, (2) by an undue relaxation of the arteries, or (3) by both the forementioned, with consequent pressure upon the accompanying nerves.

Test of Theory

Inasmuch as almost all the arteries supplying the head and brain and their associated structures originate from the carotid arteries, the artificial alteration of blood pressure in the common carotids might produce a change of blood pressure in both the dilated and relaxed arteries presumed. by their pressure on the nerves, to be causing the headache. The repeated increase in blood pressure in the dilated or relaxed arteries might serve to speed up the rate of flow in those arteries and thus bring about a restoration of their walls to the normal condition with accompanying relief of pressure upon the nerves involved.

1. Digital pressure upon both carotids is accomplished easily by applying all four fingers to the common carotid, on each side of the neck, at the anterior margin of the sternocleidomastoid muscle, the lowest finger being about 1½ inch above the level of the clavicle. The thumb is placed at the back of the neck.

2. In operating upon oneself it is more comfortable to reverse this procedure and place the thumb on the carotid and the fingers at the back of the neck.

3. A moderate amount of digital pressure is all that is required to produce the necessary compression of the carotids.

4. Intervals of pressure lasting ten seconds, alternating with intervals of release of pressure of the same duration, the whole repeated some five times, are sufficient in most cases to produce complete or partial relief from the severest of headaches.

5. Since the carotid sinus is situated at the terminal part of the carotid and the root of the internal carotid, at about the level of the hyoid bone, pressure upon the right and left carotid sinuses would seem to be unavoidable, and this, since these sinuses are active in regulating blood pressure, may partly contribute to the relief experienced.

Results

1. When I applied the method to others, complete relief from headache was obtained in 44.4 per cent of cases. All the other subjects agreed that the headache was less intense following treatment.

2. When my students applied the method to themselves, they obtained complete relief in 41.2 per cent of cases.

3. When I applied the method to myself, I obtained complete relief on 18.2 per cent of occasions.

—From *Medical Times* 73:326 (November) 1945.

Corrective Surgery of the Jaws

PHILLIP M. CHERNOFF, D.D.S., Middletown, Connecticut

A technique is described for the surgical correction, alveolectomy, of the maxilla preparatory to denture construction. Emphasis is placed on the surgical removal of the teeth to prevent fracture of the alveolar plate, on the degree and technique of reflection of the mucoperiosteum, on the amount of alveolar process excised, and on the suturing technique, to ensure a broad, mechanically and esthetically improved ridge.

THE SURGICAL correction of anatomic malformations interfering with proper denture construction often entails only a simple procedure but always yields the reward of better adaptation, better esthetics, or both. The dental profession has grown into a combination of science and art, and as such has found it necessary more and more to correct the anomalies of the jaws as a preliminary to denture construction.

Anomalies Encountered

The mandibular anomalies are comparatively few; the preponderant majority of cases requiring surgical correction are of the maxilla. In the broad, square type of skull, surgery usually is not necessary. This type of skull presents a shallow palatal vault, a low antrum which often extends downward almost to the alveolar ridge, and a low mucobuccal fold. In the development of this type of skull there usually is no downward overextension of the alveolar ridge and, therefore, in these cases alveolectomy is not necessary as a preliminary to denture construction. The type of

Fig. 1—Vertically elongated skull with high palatal vault, high mucobuccal fold, and exposure of gingivae on smiling. (Photographs were taken by Harry L. Beach of Meriden, Connecticut.)

Fig. 2—Profile view of patient shown in Figure 1, with extreme exposure of the gingivae on smiling.

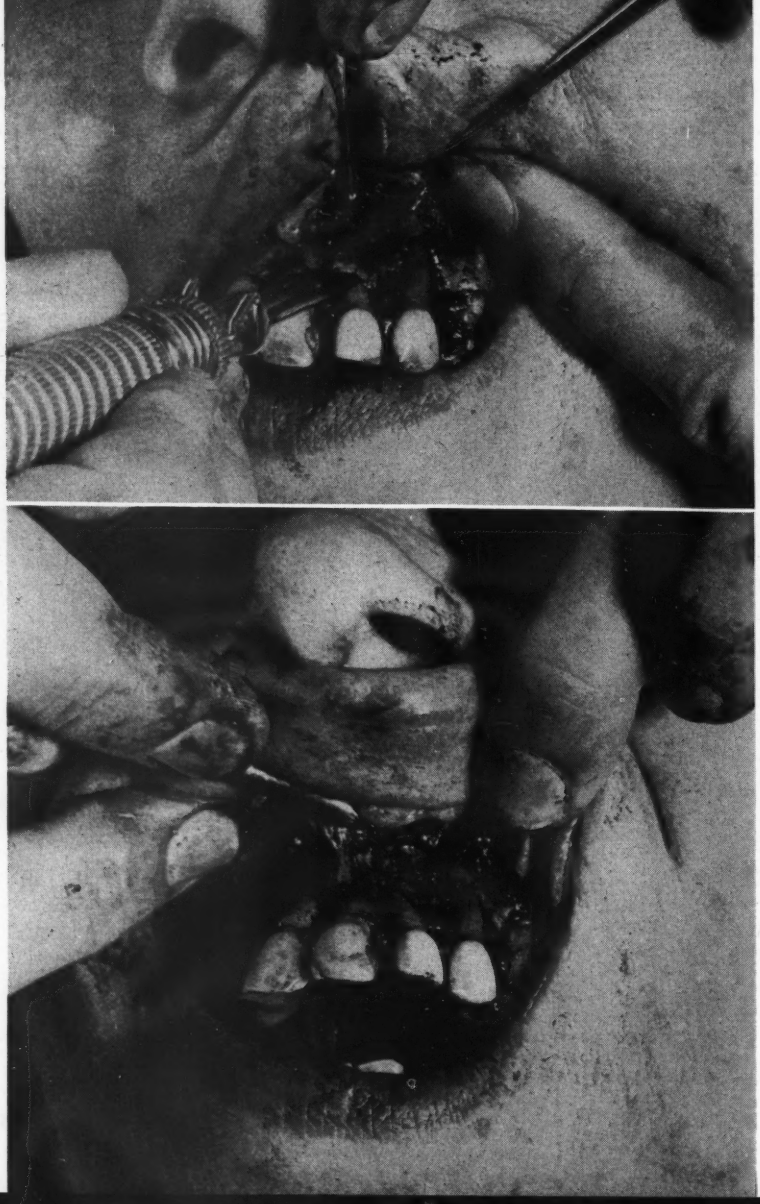


Fig. 3 (top)—The use of the chisel limits the amount of bone to be removed in the surgical removal of the teeth. The periosteotome is used to reflect the mucoperiosteum.

Fig. 4 (center)—Removal of the overlying alveolar bone.

Fig. 5 (bottom)—The labial bone is completely removed, and the teeth are ready to be delivered.

skull which most often requires alveolectomy is the vertically elongated type with a high palatal vault—often with a narrow arch—and a high mucobuccal fold. In this type of skull, smiling often exposes the gingival tissue above the upper anterior teeth (Figs. 1 and 2). In these cases there usually is considerable leeway for extensive ridge reduction with safety. inasmuch as the antrum in this skeletal type usually is high above the apexes of the posterior teeth.

Roentgenologic Examination

It is imperative that adequate roentgenograms be made and studied thoroughly before surgery is done. To be forewarned with roentgenograms is to eliminate the undesirable elements. Roentgenograms will reveal hidden impacted teeth and anatomic anomalies not apparent in a clinical examination. The position of the lowest border of the antrum and its anteroposterior limitations must be determined.

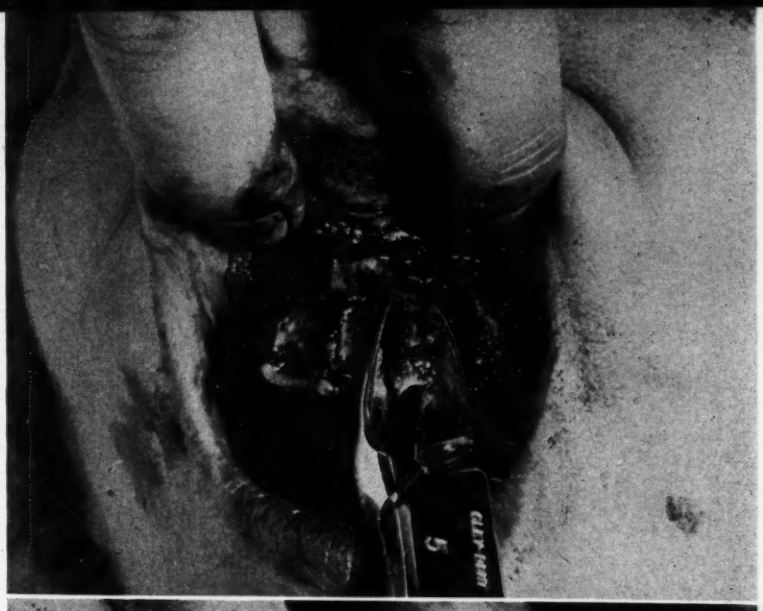
Surgical Technique

1. In those cases requiring alveolectomy in which teeth are present (Fig. 1) it is better to remove the teeth surgically. Surgical removal prevents the undesirable fracture of the labial or buccal alveolar plate that so often is the result of forceps extraction. This alveolar fracture is especially common in the cuspid area, although its occurrence in any area can cause considerable difficulty. In removing teeth surgically the amount of bone to be removed is determined by the operator's intentions and not by an accidental fracture of unpredictable proportions. Figures 3, 4, and 5 show how the application of a chisel definitely limits the amount of bone to be removed. After the surgical removal of the teeth, the operator may proceed to reduce the alveolar ridge.

Fig. 6 (top)—The alveolar process is excised first in the lateral dimension, using the rongeurs, to ensure a broad ridge.

Fig. 7 (center)—The alveolar process is excised second in the vertical dimensions, using the rongeurs.

Fig. 8 (bottom)—All sharp points and edges on the alveolar process are smoothed with bone files.



2. The mucoperiosteum is reflected buccally and labially, but only to the level to which the alveolar process will be trimmed. Retraction of the mucoperiosteum only slightly beyond this line may be excusable, but any reflection and retraction considerably beyond the limits of intended alveolectomy serves no purpose and only injures the tissue which will be required later to support the periphery of a denture. The oral tissues should be handled with extreme care despite their apparent ability to withstand considerable abuse. Reflection of the mucoperiosteum is accomplished with a periosteotome, number 2 Molt (Figs. 3, 4, and 5). The palatal flap is not retracted at all.

3. With the labial and buccal flap retracted, the alveolar process is trimmed and easily freed from its attachment to the palatal mucoperiosteum. In other words, instead of separating the palatal flap from its underlying bone, the bone to be removed is separated from its overlying flap. By this procedure there is no possibility of leaving scar tissue in this important area of denture support inasmuch as the periosteum has not been lifted from the remaining bone surface.

Excision of the excessive alveolar process is accomplished with rongeurs. The shear type number 5 rongeur is highly effective for this kind of osseous excision. It is advisable to trim the process in the lateral dimension first and in the vertical dimension second (Figs. 6 and 7). If the length is reduced as the second step, a broad ridge is assured; if the length is trimmed first and the buccal plate is removed second, there is the danger of creating a sharp, thin ridge. This condition is extremely undesirable and can be prevented by the suggested sequence of trimming the width first and then the length.

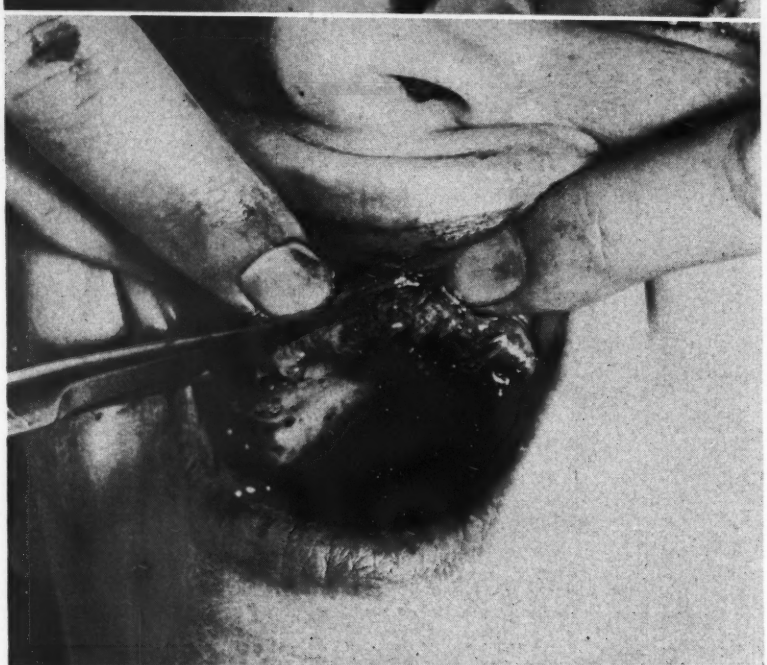


Fig. 9 (*top*)—*Buccal and labial mucoperiosteum being trimmed with shears.*

Fig. 10 (*center*)—*Soft tissue surgery completed.*

Fig. 11 (*bottom*)—*Suturing of the flaps should be done carefully, holding the edges of the flaps lightly in juxtaposition.*

4. When the process has been trimmed sufficiently, all sharp points and edges are smoothed with bone files such as Clev Dent number 10 (Fig. 8). All spicules are then removed and the osseous surface is curetted lightly to clear the marrow openings that may have been clogged with bone filings.

5. The mucoperiosteal flap is brought down into position and studied for a moment to determine how much of its length has been made superfluous by the removal of its underlying bone. The edge of the palatal mucoperiosteum usually is trimmed only a little, for it is best to bend the palatal mucoperiosteum over the crest of the ridge to provide a thicker covering for the ridge than the buccal mucoperiosteum can provide. By pressing the palatal flap over the crest of the ridge and allowing the buccal flap to assume its relaxed position it is easily determined how much of the buccal and labial mucoperiosteum must be trimmed away. Excellent shears for this purpose are the Bard-Parker, edge number 4100S (Figs. 9 and 10).

6. It is important to bear in mind at this time the importance of maintaining the height of the mucobuccal fold. If too much of the buccal mucoperiosteal flap is removed it will be too short for proper coaptation with the edge of the palatal mucoperiosteum. This results in the undesirable downward pull of the buccal flap when suturing brings both flaps into coaptation. The traction thus created will pull down the mucobuccal fold, and this distortion will be an obstacle in the construction of a successful denture. When trimming the buccal flap for length, therefore, only as much should be removed as will permit a relaxed coaptation with the palatal flap.

7. Suturing should not be strenuous. That is to say, there should be

Fig. 12—Appearance of patient smiling after insertion of dentures following surgical resection of the alveolar ridge.

Fig. 13—Profile view of the patient shown in Figure 12.

no pulling on the flaps by the sutures—they should hold the edges of the flaps lightly in a relaxed juxtaposition (Fig. 11). Tissue blanching as a result of suturing too tightly is undesirable and should be avoided.

8. Figures 12 and 13 show the appearance of the patient after insertion of the dentures. Comparison with Figures 1 and 2 emphasizes the improvement in esthetics that is made possible by alveolectomy.

9. In an edentulous mouth which requires resection of the entire maxillary ridge, such as is shown in Figure 14, an incision is made along the ridge from tuberosity to tuberosity and extending slightly upward along the distal surface of each tuberosity. Figure 15 shows the excellent result achieved by alveolectomy of the case illustrated in Figure 14.

Partial Osseous Resection

Maxillary Protuberances—One of the sites most frequently requiring resection is the maxillary tuberosity. The elongation and bulbous overgrowth of the tuberosity often are associated with and caused by the downward growth of the upper molars in the absence of corresponding lower molars. This lack of occlusal opposition allows elongation of the upper teeth to such an extent that the cusps of the upper molars often strike the lower edentulous ridge. This downward migration of the molars is accommodated by a corresponding downward extension of the supporting osseous structure.

Lack of function of these teeth often will bring about a change in the histologic character of the supporting osseous structure; the trabeculae are resorbed gradually and a fatty marrow is developed in their stead. As this fatty marrow replaces the trabeculae, the body of such a tuberosity is found to be extremely soft, and is crushed more often than cut by the rongeurs. Filing, in these instances, if done at all, should be done with extreme care.

In the removal of a localized alveolar protuberance, or in trimming an excessively bulbous tuberosity, the incision should be generous in length, extending well beyond the limits of intended bone resection. The purpose of this is to place the edges of the flap over bone that has not been traumatized; this encourages better healing and minimizes postoperative complications. Another purpose of generosity in the length of a curved incision is to assure a sufficient vascular supply to the flap. The consideration of nourishment must ever be kept in mind when making an incision for a mucoperiosteal flap. An incision always should reach the bone surface along its entire length so that the periosteum may be peeled off the bone with the flap.

After retraction of the flap the same procedures are followed in sequence as in extensive resection: cutting with rongeurs, smoothing with a bone file, and clearing away spicules and filings with curets.

The lateral excrescences that sometimes are found extending outward like a shelf from the buccal surface of the maxillary ridge always should be removed inasmuch as they cannot be circumvented in denture construction. The median palatal protuberance—torus palatinus—on the other hand, only rarely requires surgical

Fig. 14—Plaster cast of edentulous mouth which requires resection of the entire maxillary ridge.

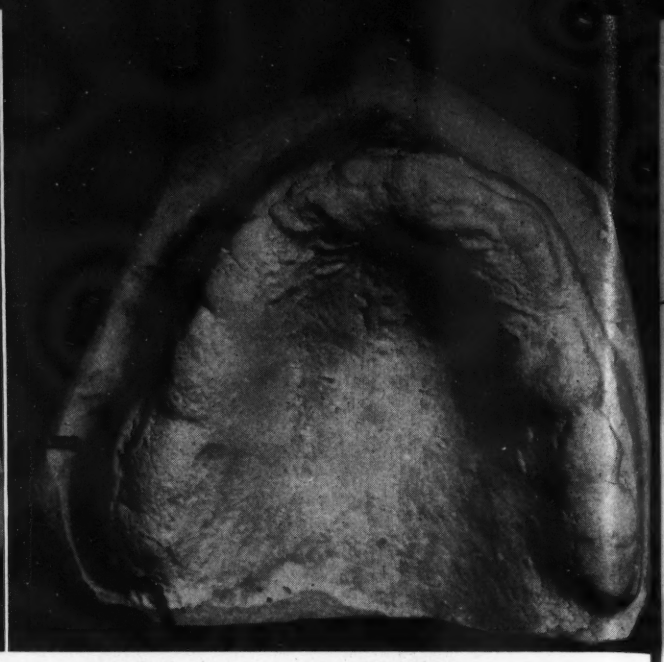


Fig. 15—Plaster cast of same mouth following alveolectomy. Undercuts have been reduced, making the ridge easier to fit.

intervention; it usually can be circumvented by constructing the denture around it and relieving the denture sufficiently.

Mandibular Protuberances — Rounded, nodular excrescences of compact bone—torus linguales—often are found on the mandible, on the lingual surface in the region of the premolars. These vary in size and, if small, may not interfere with a proper fitting of a relieved denture. Large protuberances should be removed in the following manner:

1. An incision is made along the crest of the mandibular ridge and extending slightly beyond the mesial and distal limits of the nodule to be removed. From each end of this incision another incision is made extending downward along the lingual surface of the mandible and ending short of the floor of the mouth. Retraction of this type of flap affords excellent vision and access to the field of operation.

2. Removal of the nodule of compact bone may be accomplished with chisels; however, my preference is the use of burs.

3. After the nodule is eliminated by shaving it away with burs, the surface is smoothed with a file and the flap is brought to place and sutured.

Comments

The conscientious dentist routinely will correct minor anatomic malformations before beginning denture construction. Extreme conditions, such as that shown in Figure 14, may be beyond the capabilities of many general practitioners but specialists in oral surgery can be called on to correct such malformations. In all mouths surgically prepared for wearing dentures, there is mechanical and esthetic improvement that affords comfort and gratification to both patient and dentist.

360 *Main Street.*

We Can't Pay You, But—

NO DENTAL author can ever be *paid* for a valuable technical or scientific article. The value of such material is above a monetary basis. In the preparation of a technical article, however, an author often expends money for drawings, photographs, models, or graphs. We should like to help defray some of these expenses.

Until further notice, THE DENTAL DIGEST *will allow* $25.00 *toward the cost of the illustrations provided by the author of every article accepted.*

If you have a constructive idea, an innovation, a new result of tried and proved experiment, put it down in writing, illustrate it, and send the material to: The Editor of THE DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

We hope that you will accept this invitation!

A Report on the Treatment of Rampant Caries with Parathyroid Extract

HAROLD J. WINKELSPECHT, D.D.S., BEVERLY, NEW JERSEY

A report is made of five typical case histories in which parathyroid and thyroid extract were administered in the treatment of rampant caries. Most of the patients had received calcium and phosphorus medication without success.

The results showed that all the patients were restored to better than average dental health. No ill effects were noted, and in some cases there was great improvement in the patients' general health.

RAMPANT CARIES is a serious problem to the dentist, particularly when it occurs in young patients. Persons apparently in normal health present themselves with completely broken-down teeth and areas of decalcification, even when proper home prophylaxis, diet, and professional care are exercised. Other patients who completely disregard all the rules of good dental health may have normal, healthy mouths despite a great need for dental prophylaxis.

Treatments Prescribed

Rampant caries apparently is due to faulty calcium and phosphorus metabolism, which brings about a deficiency of calcium in either the blood stream or the saliva, or both. Calcium is continually absorbed by the alimentary tract, and eliminated by the secretions, including the saliva. Blood calcium tests may be normal, but this is no indication of the quantity absorbed and eliminated, which, I believe, is the factor controlling susceptibility to caries. With this thought in mind, many of us prescribe calcium and phosphorus medication to patients who are more than normally caries-susceptible, with varying results. Two tablets daily, containing 9 grains of dicalcium phosphate, 6 grains calcium gluconate with 660 units of vitamin D, are prescribed for periods of from four to six months. This results in a decrease in the number of cavities and sometimes in complete freedom from caries in about 90 per cent of the patients over a six months' period. This is a common occurrence and is gratifying to the dentist and the patient.

This treatment does not, however, solve the problem of the other 10 per cent of the patients who are doomed to have a huge number of sensitive cavities, which naturally causes them to lose faith in modern dentistry. Parathyroid gland extract, with the addition of thyroid extract, when thyroid deficiency exists, with or without supplemental calcium and phosphorus medication, appears to be the answer in these cases, particularly in young patients. The treatment is usually symptomatic, however, inasmuch as the deficiency is only mild in nature. The only test for the function of the parathyroid gland is a blood calcium test made from 10 cubic centimeters of blood, which is often difficult to obtain from young patients. A basal metabolism test should be made, particularly when other symptoms indicate a low metabolic rate.

The five following case histories are of patients treated with parathyroid and thyroid extract. Most of the patients had received calcium and phosphorus medication without success. Treatment was not attempted in patients who were not cooperative in home prophylaxis.

Case Histories

Case I—Sister E., aged 28: On May 16, 1941, examination revealed seven large cavities. These were restored, and calcium phosphorus medication was instituted. On September 10, examination revealed six new cavities, all of which were restored. The calcium phosphorus medication was continued.

On April 24, 1942, examination revealed nine cavities and a third molar in need of extraction. Calcium phosphorus medication was continued, with the addition of 1/10 grain parathyroid extract three times a day. On September 3, examination revealed no new cavities. The calcium phosphorus medication was continued, but the parathyroid extract was discontinued. Examination on December 22 revealed two small cavities. The calcium phosphorus medication was discontinued.

Case II—Miss M. B. S., aged 7: Examination on March 27, 1940, revealed two cavities in the permanent first molars and four cavities in deciduous molars. Carious deciduous anteriors were disregarded as to treatment. Calcium phosphorus medication was prescribed. On November 8, examination revealed eleven cavities in the permanent first molars. Calcium phosphorus medication was continued, with further correction of the diet as to sugar intake.

Examination on July 23, 1941, revealed six cavities in the permanent first molars, and eight cavities in the deciduous molars. The calcium phosphorus medication was discontinued. Medication of 1/10 grain parathyroid, three times a day, was instituted on September 5 after completion of the dental restorations. On July 13, 1942, examination revealed no cavities. All medication was discontinued. Examination on January 22, 1943, revealed six new cavities. The patient is now moving to a new locality, and

(*Continued from page* 96)

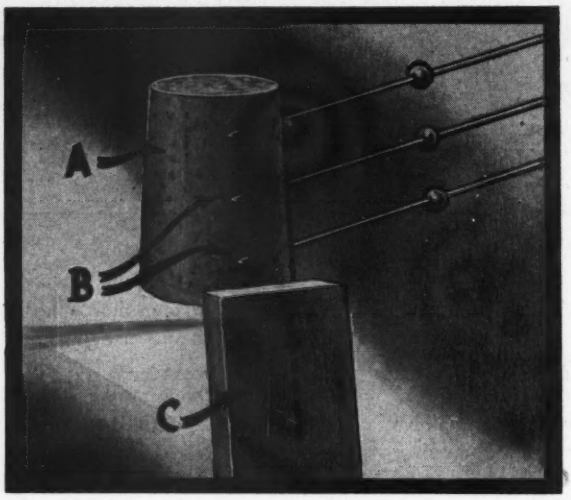


Fig. 1

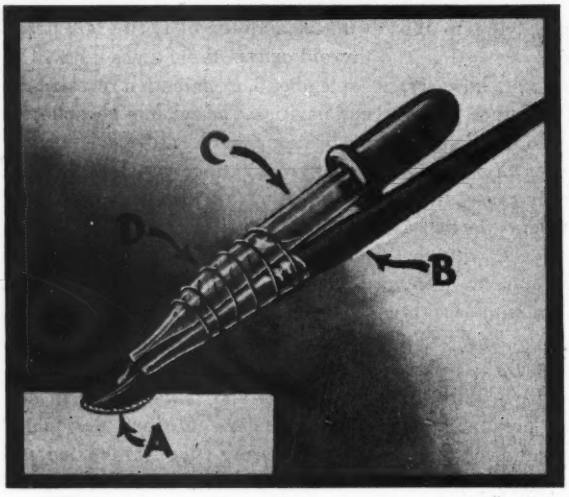


Fig. 2

Fig. 3

Clinical and Laboratory

A Method of Obtaining Uniformly Sharpened Hypodermic Needles

Abraham H. Glick, D.D.S., Chillicothe, Ohio

Fig. 1—An ordinary cork (A) is used. The needles are inserted through the cork, to extrude at the surface of the cork (B). A moistened Arkansas stone (C) is passed over the exposed beveled edges of the needles. This method preserves the proper bevel.

An Instrument for Applying Acrylic Monomer

Chester J. Henschel, D.D.S., New York

Fig. 2—In acrylic jacket or bridge techniques in which delicate shadings or thin layers of monomer are required, adding the monomer with an ordinary dropper floods and disperses the colored acrylic granules. Using a sable brush (B) to carry the monomer to the granules (A) from the dropper (C) is a delicate and positive method. The dropper is attached to the brush with stainless wire (D).

An Aid in Polishing Interproximal and Some Gingival Areas

Lieutenant W. J. Sunderman (DC) USN, Saint Louis, Missouri

Fig. 3—To give a finish to a prophylaxis, the use of pumice-impregnated, waxed silk floss or tape is helpful. To impregnate the silk floss with pumice, hold the thumb over the floss and draw it through moistened pumice which is held in a medicament glass.

Readers are Urged to Collect $10.00

For every practical clinical or laboratory suggestion that is usable, THE DENTAL DIGEST will pay $10.00 on publication.

You do not have to write an article. Furnish us with rough drawings or sketches, from which we will make suitable illustrations; write a brief description of the

SUGGESTIONS . . . .

A Holder for a Single X-ray Film

Miss Phyllis La Rossa, Bronx, New York

Fig. 4—An ordinary corkscrew is soldered to a single film clip. A screw such as that used with cement liquid is satisfactory. The screw is then inserted into a large cork, about 1 inch in diameter. A film attached to the clip is thus floated in the developing solution in the tank. The cork also serves as a handle when viewing the film, and may be used as a base to hold the film while it is drying.

Fig. 4

An Aid in the Identification of Needles

Louis Berman, D.D.S., New York

Fig. 5—Attach a colored glass bead (A) to a wire prior to inserting the wire into the lumen of the needle (B). The glass bead serves as an identification tag in case the wire is mislaid or dropped, and also serves as a handle in manipulating the wire. The tagged needle can be seen quickly in a sterilizer. The glass is capable of withstanding the heat of sterilization without breaking.

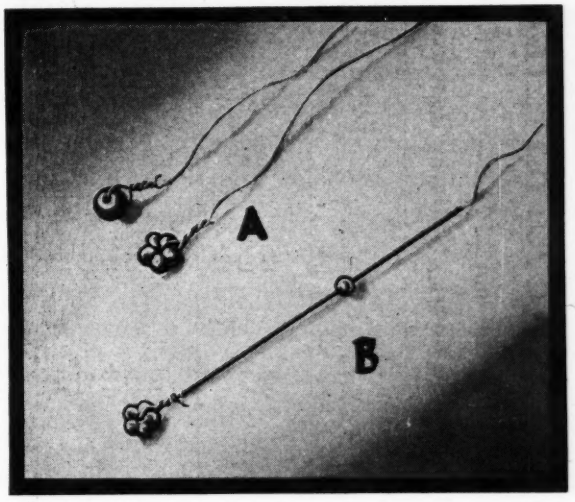


Fig. 5

An Aid in Polishing Full Crowns

William A. Nast, D.D.S., Elizabeth, New Jersey

Fig. 6—The split ends of an ordinary wood clothespin are cut down so that the ends may engage the crown. The natural spring of the clothespin will hold the crown firmly in position, which makes for ease in holding it against the lathe during polishing.

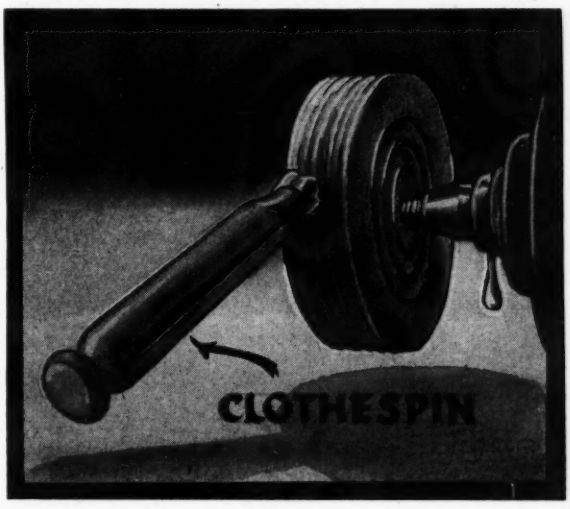


Fig. 6

technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time.

Turn to page 96 for a convenient form to use.

Send your ideas to: Clinical and Laboratory Suggestions Editor, THE DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

RECOMMENDED DIETARY ALLOWANCES[1]

Revised 1945

Food and Nutrition Board, National Research Council

	Calories	Protein grams	Calcium grams	Iron mg.	Vitamin A I. U.[2]	Thiamine mg.[3]	Riboflavin mg.[3]	Niacin (Nicotinic Acid) mg.[3]	Ascorbic acid mg.	Vitamin D I.U.
Man (154 lb.)										
Sedentary	2500	70	0.8	12[4]	5000	1.2	1.6	12	75	[5]
Moderately active	3000	70	0.8	12[4]	5000	1.5	2.0	15	75	[5]
Very active	4500	70	0.8	12[4]	5000	2.0	2.6	20	75	[5]
Woman (123 lb.)										
Sedentary	2100	60	0.8	12	5000	1.1	1.5	11	70	[5]
Moderately active	2500	60	0.8	12	5000	1.2	1.6	12	70	[5]
Very active	3000	60	0.8	12	5000	1.5	2.0	15	70	[5]
Pregnancy (latter half)	2500[6]	85	1.5	15	6000	1.8	2.5	18	100	400 to 800
Lactation	3000	100	2.0	15	8000	2.0	3.0	20	150	400 to 800
Children up to 12 yrs.:[7]										
Under 1 yr.[8]	100/2.2 lb.	3.5/2.2 lb.	1.0	6	1500	0.4	0.6	4	30	400 to 800
1-3 yrs. (29 lb.)	1200	40	1.0	7	2000	0.6	0.9	6	35	400
4-6 yrs. (42 lb.)	1600	50	1.0	8	2500	0.8	1.2	8	50	400
7-9 yrs. (55 lb.)	2000	60	1.0	10	3500	1.0	1.5	10	60	400
10-12 yrs. (75 lb.)	2500	70	1.2	12	4500	1.2	1.8	12	75	400
Girls over 12 yrs.:[7]										
13-15 yrs. (108 lb.)	2600	80	1.3	15	5000	1.3	2.0	13	80	400
16-20 yrs. (119 lb.)	2400	75	1.0	15	5000	1.2	1.8	12	80	400
Boys over 12 yrs.:[7]										
13-15 yrs. (103 lb.)	3200	85	1.4	15	5000	1.5	2.0	15	90	400
16-20 yrs. (141 lb.)	3800	100	1.4	15	6000	1.8	2.5	18	100	400

[1]Tentative goal toward which to aim in planning practical dietaries; can be met by a good diet with a variety of natural foods. Such a diet also will provide other minerals and vitamins, the requirements for which are less well known.

[2]The allowance depends on the relative amounts of vitamin A and carotene. The allowances of the table are based on the premise that approximately two-thirds of the vitamin A value of the average diet in this country is contributed by carotene and that carotene has half or less than half the value of vitamin A.

[3]For adults (except pregnant and lactating women) receiving diets supplying 2000 calories or less, such as reducing diets, the allowances of thiamine, riboflavin, and niacin may be 1 mg., 1.5 mg., and 10 mg. respectively. The fact that figures are given for different calorie levels for thiamine, riboflavin, and niacin does not imply that we can estimate the requirement of these factors within 500 calories, but they are added merely for simplicity of calculation. Other members of the B complex also are required, though no values can be given. Foods supplying adequate thiamine, riboflavin, and niacin will tend to supply sufficient of the remaining B vitamins.

[4]There is evidence that the male adult needs little or no iron. The allowance will be provided if the diet is satisfactory in other respects.

[5]For persons who have no opportunity for exposure to clear sunshine and for elderly persons, the ingestion of small amounts of vitamin D may be desirable. Other adults probably have little need for vitamin D.

[6]During the latter part of pregnancy the allowance should increase approximately 20 per cent over the preceding level. The value of 2500 calories represents the allowance for pregnant, sedentary women.

[7]Allowances for children are based on the needs for the middle year in each group (as 2, 5, 8, etc.) and are for moderate activity and for average weight at the middle year of the age group.

[8]Needs of infants increase from month to month with size and activity. The amounts given are for approximately six to eight months. The dietary requirements for some of the nutrients such as protein and calcium are less if derived largely from human milk.

The Editor's Page

THE NATIONAL Research Council has recommended certain dietary allowances for all members of the population. These recommendations are printed on the opposite page. Particular attention should be directed to the protein requirements. The importance of an increased protein intake during growth and development, and during pregnancy and lactation, is emphasized. Protein, literally meaning "holding first place," plays a significant role in nutrition. Deficiency of protein in the circulating blood lowers the hemoglobin, and, as a result, anemia may develop. Deficiencies in blood protein lower the natural body defenses against bacterial invasion. Arnell, and associates, have written:[1] "Recent investigations in acquired immunity suggest that antibody production is a phase of protein metabolism and that a protein deficiency will in time impair the maturation or preservation of the antibody mechanism, leading to loss of acquired immunity and increased susceptibility to infection. The same reasoning seems to hold for the production of toxins, antitoxins, and antigens." Protein deficiency in solid tissue threatens the power of tissue repair and regeneration.

In a talk before the Chicago Medical Society, Severinghaus pointed out that the child born of a mother who had less than 75 grams of protein a day is likely to be small, poorly developed, and will carry a low pediatric classification. The woman who has had a high protein intake during pregnancy has less difficulty in labor and is less likely to have toxemia or edema. A high protein intake decreases the morbidity in pregnancy and labor and lessens the congenital abnormalities. During the last trimester of pregnancy, the woman should receive at least 85 grams of protein a day, to be increased to 100 grams a day during lactation. The pregnant woman, according to Severinghaus, should receive 10,000 vitamin A units and 200 milligrams of ascorbic acid daily. These figures are slightly higher than those recommended by the National Research Council.

Referring to preoperative and postoperative nutrition, in which dentists are particularly interested, Severinghaus stressed the role of oxygen, water, carbohydrate, and protein. People may tolerate a carbohydrate shortage for only twenty-four hours. The presence of acetone in the urine suggests that the ketosis state is developing. Carbohydrate must be given in the amount of 100 grams daily. It is better to give glucose parenterally or rectally in two or three doses than in one dose. According to Severinghaus it is safe to go without protein intake for a week to ten days following surgery. Postoperative edema is a sign of protein deficiency. The albumin in the blood serum apparently maintains the osomotic pressure to prevent edema. A deficiency in protein also results in delayed wound healing. In febrile states and in acute infections, ascorbic acid should be given in massive doses.

Isaac Schour of the University of Illinois, College of Dentistry, speaking before the same medical group, stressed these three important points:

1. There is a difference between nutrition and diet. Nutrition determines the quality of dental tissues that are forming, but diet indicates what happens to the tissue postnatally.

2. The tooth is a biologic recorder as well as an organ of mastication. During its period of growth it is a recording apparatus; after formation, it is a functioning organ. Calcium and other nutrients are important during the growth stage but of no particular consequence after tooth formation.

3. A sound masticatory apparatus is necessary for sound nutrition.

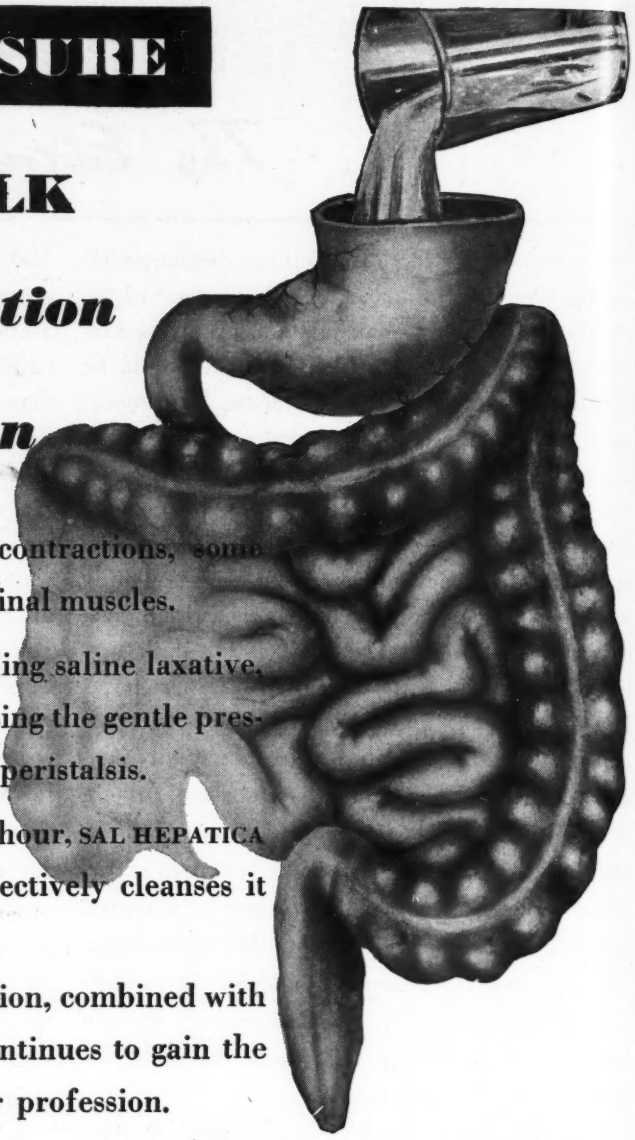
[1] Arnell, R. E.; Goldman, D. W.; and Bertucci, F. J.: Protein Deficiencies in Pregnancy, J.A.M.A. 127:1101-1109 (April 28) 1945.

GENTLE PRESSURE

of LIQUID BULK

relieves constipation

without irritation



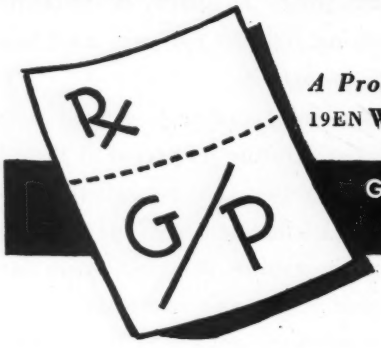
In order to reinforce peristaltic contractions, some laxatives act by irritating the intestinal muscles.

In contrast, SAL HEPATICA, a sparkling saline laxative, follows nature's own methods by using the gentle pressure of "liquid bulk" to stimulate peristalsis.

Acting promptly, usually within an hour, SAL HEPATICA flushes the intestinal tract and effectively cleanses it of waste.

Because of this quick yet gentle action, combined with its pleasant taste, SAL HEPATICA continues to gain the ever-increasing confidence of your profession.

SAL HEPATICA



A Product of BRISTOL-MYERS COMPANY
19EN West 50th Street • New York 20, N. Y.

GENTLE PRESSURE FOR GENTLE
YET THOROUGH LAXATION

When just a little makes a big difference

Remember the new life and added get-up-and-go you noticed in your auto recently when adequately "leaded gas" came back from war? Incredible as it seems, that vast improvement in performance was caused by the addition of a few cc's of Tetraethyl Lead to a gallon of standard gasoline!

Yes, in Dentistry, too, there is a striking example of just a little making a big difference . . . as witness the deeper, more enduring character of anesthesia that came about in 1940 when science added an infinitesimal amount * of Pontocaine to a standard 2% Novocain solution.

No increase in either Novocain concentration or vasoconstrictor content was necessary. That minute amount * of Pontocaine made the difference . . . an outstanding and truly trustworthy difference! Dentistry was at last provided with a solution specifically designed for those operative cases where conventional 2% solutions proved inadequate.

* Only fifteen one hundredths (0.15) of one per cent.

NOVOCAIN-PONTOCAINE-COBEFRIN

COOK-WAITE *Laboratories, Inc.*

170 Varick Street, New York 13, N. Y.
Laboratories: Wheeling, W. Va. & Springville, N. Y.

Cobefrin, Novocain, Pontocaine are Reg. Trademarks, Winthrop Chemical Company, Inc.

CLINICAL AND LABORATORY SUGGESTIONS

Form to be Used by Contributors

To: Clinical and Laboratory Suggestions Editor
THE DENTAL DIGEST
708 Church Street
Evanston, Illinois

From: _____

_____

Subject: _____

Explanation of Procedure:

Sketch:

$10 will be paid to author on publication of accepted suggestion.

A Report on the Treatment of Rampant Caries With Parathyroid Extract

(*Continued from page* 89)

was advised to receive treatment by an endocrinologist.

Case III—Miss M. J. P., aged 8: The lower left first molar and three deciduous teeth were extracted and two restorations were placed on February 9, 1937. The necessary treatment was not completed. On April 15, 1938, the patient returned. At that time two more restorations were placed. On July 20, 1939, the patient returned for a second time when the parents became aware of the serious condition of the child's teeth. The upper right and upper left first molars had to be extracted, and the pulps were removed from the upper left central incisor and upper left second bicuspid. Four restorations over almost exposed pulps completed the dental treatment. Calcium phosphorus medication was begun.

On March 13, 1940, the patient was re-examined, at which time fifteen cavities were found. This was three months after completing the forementioned treatment. The basal metabolic rate was found to be subnormal. Thyroid extract, with the addition of 1/10 grain parathyroid, three times a day, were prescribed for a period of six months. Examination on November 18 revealed one small cavity. All medication was discontinued. On July 31 of 1942, examination revealed no cavities. There was a general improvement in the patient's health, and a gain in weight also was apparent.

Case IV—Miss M. F., aged 14: This patient, who weighed 104 pounds, was seen on July 31, 1942, when she gave a history of rampant caries. She was one of the most caries-susceptible patients I have ever seen. Examination revealed forty-five cavities, some of which involved three-fourths of the crown of the teeth. Parathyroid extract, 1/10 grain twice daily, was prescribed immediately. At the time of completion of the dental restorative work, on De-

(*Continued on page* 101)

(*Continued from page* 96)

cember 19, no new cavities had developed.

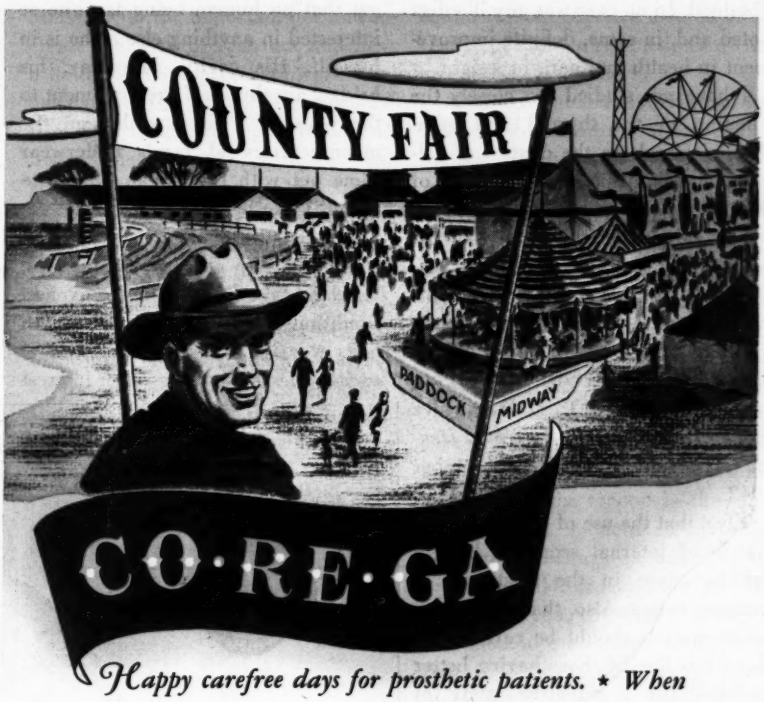
By April 27, 1943, the patient's weight had increased to 117 pounds. Examination revealed one small fissure cavity and one smooth-surface cavity in a previously decalcified area. One-tenth grain parathyroid extract and one calcium phosphorus tablet per day were prescribed, to be taken for the next six months. The results in this case were extremely impressive. Not only was caries virtually stopped, but the patient had gained thirteen pounds in weight and had an entirely different outlook on life.

Case V—Miss E. T., aged 7: Examination on April 21, 1941, revealed nine extremely deep cavities in the first permanent molars. Calcium phosphorus medication was instituted. On January 19, 1942, examination revealed nine new cavities. At this time 1/10 grain parathyroid extract, twice daily, with calcium phosphorus medication, were prescribed. Examination on June 23 revealed no cavities. The parathyroid extract medication was discontinued at this time but the calcium phosphorus was continued.

Examination on August 18 revealed one small cavity. There were no cavities on December 2. Four small cavities had appeared by April 30, 1943. Parathyroid extract, 1/10 grain every other day, was prescribed. Because of the extreme nervousness of the patient and the difficulty in treating her, no attempt was made to correct the carious deciduous teeth. Caries has stopped progressing in these teeth, however, and, as a result, the occlusal enamel has broken away, resulting in eburnation of the carious material.

Conclusions

From these case histories it will be noted that all the patients were restored to even better than average dental health. Some patients continued relatively free from caries after discontinuing treatment, while for others it was necessary to continue treatment. In all cases, cooperation of the family physician was



Happy carefree days for prosthetic patients. ★ When a quality denture adhesive is indicated prescribe CO-RE-GA. ★ The Perfect Adhesive for Dentures.

Mail this coupon for your supply of professional samples

PLEASE SEND FREE SAMPLES FOR PATIENTS

Dr. _____

_____

_____

COREGA CHEMICAL COMPANY
208 ST. CLAIR AVENUE, N. W. • • CLEVELAND 13, OHIO

CO-RE-GA IS NOT ADVERTISED TO THE PUBLIC

WILSON'S CO-RE-GA

COREGA CHEMICAL COMPANY
208 St. Clair Ave., N. W. Cleveland 13, Ohio

KREX
Impression
CORRECTIVE

Another LEE SMITH Achievement

A BETTER Oxy-Eugenol Corrective Wash KREX mixes and handles with great ease . . . sets quickly or slowly in the patient's mouth as the case requires and according to your own mix . . . reproduces accurate detail. Truly a superior product! Order a box of KREX today and begin making *perfect fitting* dentures.

YOU CONTROL THE SETTING TIME!

LEE S. SMITH & SON MFG. COMPANY
7325 Penn Ave. Pittsburgh 8, Pa.

obtained. In no case was any ill effect noted and, in some, definite improvement in health and gain in weight.

I have not studied too closely the function of the thyroid and parathyroid glands in the control of calcium metabolism. The function of the glands of internal secretion is still a subject about which there is much to be learned. Numerous articles have been written in current literature, one of which I can recommend highly: GLANDULAR AND GENERAL SYSTEMIC FACTORS IN THE PROCESS OF DECAY by T. A. Hardgrove in *The Journal of the American Dental Association,* issue of October 1942.

I feel that the use of extracts of the glands of internal secretion have a definite place in the treatment of rampant caries. Also, that further experimentation should be carried out along this line by those having better facilities for a scientific study of these cases than is possible in the dental office.

Cooper and Warren Streets.

Contra-Angles

It is Done With Mirrors . . .

A sensible suggestion by Wallace Kirby of Downer's Grove, Illinois, is to turn the patient's interest from his "favorite face to his neglected mouth." Shifting the mirror emphasis from the general facial features to the mouth is a good idea. Doctor Kirby suggests that every dentist supply himself with a large, clear mirror, and that he use it constantly to show patients what dental conditions they have. Let the patients watch the procedures when convenient as treatment progresses, and, by all means, let them take a look at the case when it is finished. We sometimes forget that no human being is quite so interested in anything else as he is in himself. His cavity, his inlay, his bridge, are things of great moment to the patient. A long while ago the manufacturers of men's underwear came out with the slogan, "Next to myself I like B.V.D.'s best!"

It is so easy for us to be casual and routine in our patient relationships. We don't take enough time to explain conditions and outline treatment. In fact, we frequently get annoyed if some patients show too much interest in their dental conditions. We should encourage people to talk about their dental ailments, which would give us a chance to tell our story to an interested audience. Dentists should have a mirror handy to show patients their conditions and the treatment procedures. It is an extremely worthwhile and simple practice to follow.

The Newer Pathology . . .

The Journal of the American Medical Association, always quick to poke fun at any *lapsus calami* in the press,

2 SLOTS –
40% More Retention than a 1-Slot Bar.
REINFORCING RIB –
Prevents Rocking of Saddles and Shearing of the Anchorage. Stiffens Bar.

hat's Why
JELENKO
2 SLOT LINGUAL BARS
PATENTED
Offer the Ideal Anchorage for Acrylic Partials

16 Kt. Solid Gold
LONG —$4.30 ea.
MED. — 3.95 ea.
SHORT — 3.50 ea.
Also Made in Thrift (Plat. Col.) Gold from Your Dealer

JELENKO 2-Slot Lingual Bars are the only safe bars to use with Acrylic Partials. Their exclusive 2-Slot Anchorage Ends and Stabilizing Reinforcing Ribs provide maximum retention and absolutely prevent loosening of the lock between the bar and the acrylic.

Send Your Scrap to Jelenko. Accurate Assay; Prompt Report

J. F. JELENKO & Co., Inc.
Dental Golds and Specialties • 136 West 52nd St., New York 19, U.S.A.

recently made this contribution to the newer pathology:[1] "Even on opening the front door of a hospital I have recognized the stench from a patient with gas gangrene on an upper floor."

Tycoons and Old Dentures . . .

Modern advertising uses the device of identification to sell products. A picture showing an important-looking fellow holding a highball of Gastric Irritant Whisky in his hand is supposed to make the reader identify himself with the important one and to create the wish to rush out and buy a bottle of the appropriate whisky to help fulfill the identifying mechanism. By using the right brand of booze, one becomes a different and superior person! Or take Miss Glamour Puss testifying that since she used Putro Soap she has won herself more dates than a history book. A pimple-faced, anemic shopgirl, wanting to have her fling with men, rushes out to buy the soap that added so much to the social life of Miss Glamour Puss. This is identification at work again. It is an effective method of advertising, although sometimes a trifle on the side of fakery.

Although neither individual dentists nor dental organizations can enter the field of direct advertising, it might be that we could encourage some of the national advertisers in the dental field to use a spiel now and then that would put over a dental story by means of the identification mechanism. A few catch titles might be: "Tycoons and Old Dentures!" "Mink Coats and Missing Bicuspids!" "Do You Own a Shiny Car and Dull Teeth?" It could be that copy and illustrations could be produced that would make the tycoon in the midst of his lavish, modern surroundings have guilt feelings because he was presenting old, dreary dentures. This "shame on you, you should know better" method does drive people to action. The advertisers use the technique constantly. Who wants to think that his dentures are as old-fashioned as button shoes? The fact is that we

[1]Clinical Notes, Suggestions, and New Instruments, J.A.M.A. 129:1094 (December 15) 1945.

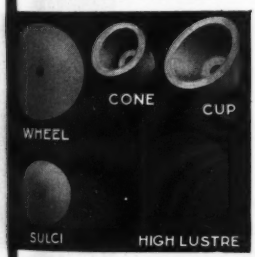
BURLEW TIME SAVERS

Speed up Postwar Practice

CLIP precious minutes off every appointment with these Burlew Aids for the Operating Room.

Whether it's a prophylaxis; cleaning, polishing or finishing fillings, inlays or gold work; separating teeth; or keeping mouth areas dry after operating, you can do it Quicker and Better the Burlew Way.

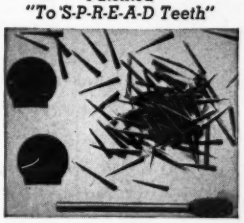
BURLEW DISCS
Patented
"The Pumice is in the Discs"



Fast, Clean — and Safe. Won't scratch the teeth or injure the gums. Use for prophylaxis, and for cleaning and polishing silicate, amalgam, porcelain, gold, acrylic and vulcanite.

$1.00 a box — any style or Assorted

BURLEW WEDGES
Patented
"To S-P-R-E-A-D Teeth"



The modern, gentle way to separate teeth for cavity preparation or interproximal cleaning. Set contains about 100 assorted celluloid wedges, 2 separating discs and 1 wedge setter.

$1.00 a set

BURLEW DRYFOIL
Patented
"Dryfoil the Case and Dismiss It"

An adhesive, waterproof foil to protect fillings, cemented inlays, etc., against saliva while setting. Wonderful for isolating medicated areas. Withstands biting; can be removed by patient.

$1.00 a box

J.F. Jelenko & Co., Inc.
Manufacturers of Dental Golds & Specialties
136 West 52nd. Street New York 19. U.S.A.

Sold by Better Dealers, Everywhere—Literature on request

Why Many Dentists Prefer

BROWN ATTACHMENTS

When Precision Attachments are Indicated for Removable Restorations:

Proximal Contact Type

- Built-in Proximal Contact. Also made in Plain Shank Type.
- Ten Standardized, interchangeable sizes.
- Strong—Made in one piece, no seams or solder.
- Springy, positive retention.
- Simple to adjust. Use any sharp instrument.
- Closed bottom in male section makes insertion and removal of restoration easy for the patient.

Proximal Contact (In Two Types) Cat. No.	Size & Shape	Plain Shank Cat. No.
327	.085" x .025"—Flat	None
321	.096" x .036"—Flat	312
322	.115" x .036"—Flat	315
323	.125" x .036"—Flat	313
324	.150" x .036"—Flat	305
325	.175" x .040"—Flat	316
None	.102" x .052"—Oval	304

$10.00 each Complete

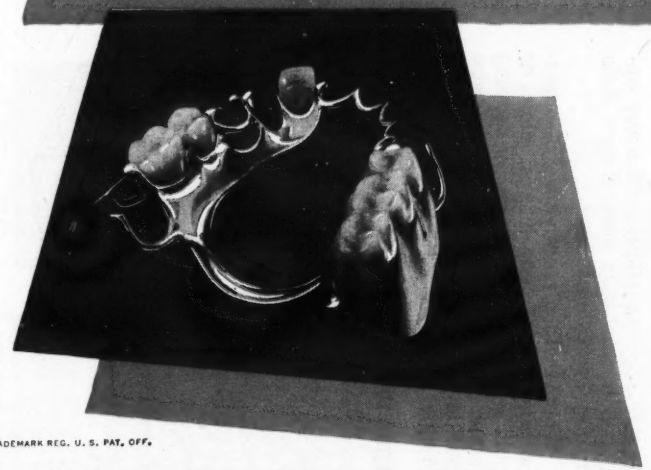
Write for Literature on the Columbia PARALLEL-OR and Precision Attachment Outfit
and
Twelve Design Charts of Attachment Cases with Descriptive and Technical Literature. They're free.

COLUMBIA DENTOFORM CORP.
131 East 23rd Street New York 10, N. Y.

VITALLIUM

MICROCAST · VITALLIUM · TECHNIQUE

Prescribe through your **VITALLIUM LABORATORY**



★TRADEMARK REG. U. S. PAT. OFF.

In the highly technical field of dental laboratory craftsmanship, Vitallium laboratories and their staffs have been of assistance to members of the dental profession in solving many difficult prosthetic construction problems. This valuable experience is at your command, on all types of cases and in all departments.

Other good Austenal products—Austenal Micromold Teeth, Vitalon Acrylic Resin Teeth, Vitalon Denture and Bridge Resin.

. . . DENTISTRY'S MOST OUTSTANDING *PROSTHETIC RESEARCH ORGANIZATION*

AUSTENAL

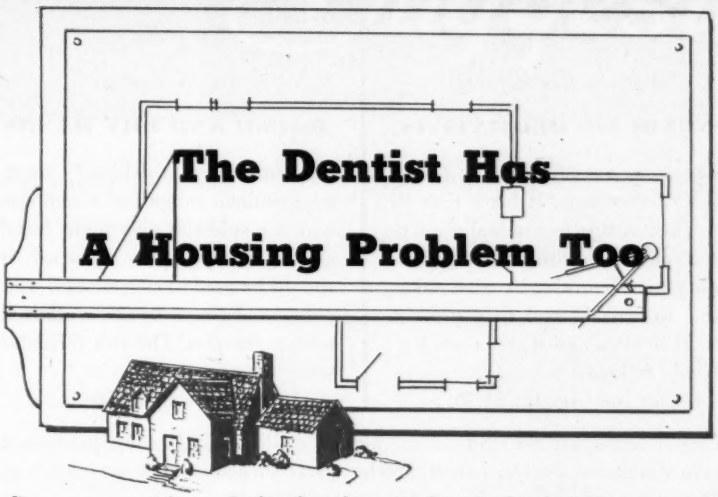
LABORATORIES, *Inc.* NEW YORK · CHICAGO

never have done much to tell people that dentures—both denture teeth and base materials—are undergoing constant improvements. No, we have given the public to understand that dentures are "permanent" and as changeless as the pyramids. We have recoiled with horror to mention "styles" in dentures. The eyeglass people tell their story with conspicuous success. Medicine has done a pretty good job to suggest that penicillin has taken the place of the mustard plaster. There is nothing wrong with dentistry talking a little more about style and appearance.

The woman in the mink coat, and with the missing bicuspids, is a common sight. She dazzles with her expensive peltries until she opens her richly rouged mouth to speak or smile. Then the contrast is appalling. Mink does not look good with missing teeth. We have no grudge against the fur industry, but we believe that mink coats should follow dental care in the scale of purchase. It is dentistry's responsibility to tell that story or to drop the hint to others that it should be done.

With the return of automobiles to the market, copywriters will sharpen their superlatives and artists will strain their styles to picture sleek, shiny cars against a background of affluence and leisure. Automobile people talk about styles, models, and appearance. They toss in brief descriptions of the mechanical details merely to satisfy the demands of the precise few. Most of their selling is done on the basis of appearance and comfort. These are, likewise, good values for us to emphasize. The automobile industry could build up a health story to sell cars. They occasionally do show people driving off on a fishing trip or spinning through the sunshine along a country road. Their health story, however, is subtle and not blatant. We have a good chance to show that "dull" teeth are not congruous with shiny cars. To be sure, we want people to have cars, but we also want them to have strong teeth for the sake of their appearance and comfort—and their health.—E. J. R.

In your ORAL HYGIENE this month



Do you ever wish you had a dental office nearer home? Do you ever daydream about the "perfect" office-suite you would like to have? . . . If the answer is "Yes," turn to page 222 of the February issue of Oral Hygiene. A Chicago architect, Jerome Salzman, has drawn up two interesting plans for combination home and dental office. These plans are readily adaptable to almost any individual requirements, but are intended as suggestions rather than working drawings. He gives facts and figures on financing, too. A lot of dentists will be getting out paper and pencil and doing a little planning for themselves after reading this article.

★ ★ ★

March 15 is just around the corner . . . To help dentists file their 1945 federal income tax returns under present regulations, Samuel Hacker, C.P.A. has prepared an "Income Tax Guide for Dentists." You will find it on page 230. There's a special explanation of Veterans' Exemptions, and an item-by-item explanation of the whole tax form.

★ ★ ★

"The problem of the shortage of dentists and the anticipated demands for dental service might be solved by developing a group of Bachelors of Dentistry to supplement the service of Doctor of Dentistry." We quote Richard D. Streeby, a dental student who presents his views in a short article on page 235. Whether or not you agree with the author, his article is well worth reading.

★ ★ ★

"Applied Psychology in the Dental Treatment Room" . . . Doctor I. Franklin Miller practices what he preaches. In his article on page 238, he describes the means and methods he, himself, employs to insure an attitude of serenity and composure on the part of the patient. His ideas are sound and practical. Almost every dentist will be able to make good use of some, or all, of Doctor Miller's suggestions.

★ ★ ★

"What Five Years of War Did to the Teeth of Dutch Children" . . . Doctor F. C. Cady, an American dentist who served with UNRRA, reports his findings of dental examinations among the children of war devastated Europe. You will find the article on page 246.

★ ★ ★

"Think Before You Threaten" . . . Harold J. Ashe says: "For every account uncollected by an easy-going dentist, another uncollected account can be found on the books of a dentist who prides himself on being "tough" with delinquent debtors. The former assumes unnecessary losses because he does not press sufficiently for collection; the latter freezes up his debtors because he crowds them too much! Somewhere between these opposite poles is a temperate zone of good judgment and minimum losses." You will want to read the whole article. It begins on page 250.

★ ★ ★

In addition to the articles we have highlighted, you will find, in the February issue of Oral Hygiene, all of the regular departments, including the new "Portraits and Profiles of American Dentists," and many short items of interest. All are waiting to fill your precious leisure moments with pleasant and profitable reading.

Fowler's Compounds

(TWO FORMULAS)

Number 1.

For the treatment of

NOVOCAIN DERMATITIS

Which is a very difficult condition to overcome. It takes time to produce it, due to gradual absorption and according to susceptibility to novocain. It also takes time to remedy and then prevent it. Directions must be conscientiously followed.

1¼ oz. net weight, $1.50.

Number 2.

For the care of

ROUGH AND DRY HANDS

This formula is a delicately scented, emollient compound which also makes a splendid over night facial cream, as it is slowly absorbed. It should be used in conjunction with compound No. 1 by those afflicted with dermatitis. The two formulas work together.

1¼ oz. net weight, 50c.

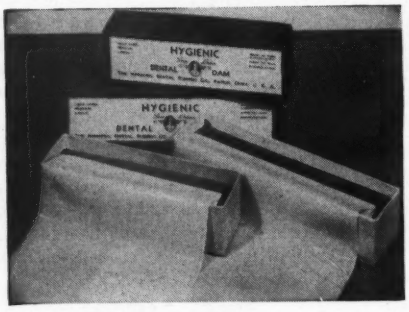
These compounds are made of the highest quality, U.S.P. constituents and were developed by Dr. Ernest Fowler (oral surgeon) after five years of clinical experimenting with professional assistance.

Until sufficient quantities are available and National distribution is obtained, this special introductory offer is made; one jar of No. 1 and two jars of No. 2 will be mailed postpaid and tax paid for $2.00.

ERNEST FOWLER, D.M.D.
Box 5343, Metro Station, Los Angeles 55, California

HELP THE RED CROSS

Pure Latex Dental Dam



Pre-War Quality

There is no longer any need to accept the old-time calendered dam that deteriorates in a short time. You can now get the genuine Latex Hygienic Dental Dam made from *liquid* latex. Noted for strength, toughness, and resistance to age and tear.

Other Quality Hygienic Dental Products

Popular-priced Hygienic Acrylic, Dr. Dietrich's Elastic Inlay Impression Material, "CC" Trimmers, Surgical Tubing, Dental Stopping, Dental Rubber and Thermolators. Ask your dental dealer for these products.

The Hygienic Dental Rubber Co., Akron 8, Ohio

Recurrent or Suppurative Parotitis

JOHN A. BIGLER, M.D.

DURING THE last several years we have observed more than sixty cases of recurrent swelling of the parotid glands, occurring in infants from 8 months of age to children 12 years old. The same condition has been observed in adults. The cases here reported occurred simply as a parotitis and were not secondary to any other infection or disease. There was no relationship to the condition of the teeth, gingivae, tonsils, or throat.

Symptoms and Diagnosis

1. The swelling may be bilateral but is usually unilateral, or it may alternate between the parotids. Involvement of the submaxillary glands never has been observed.
2. There is an acute onset of the swelling with moderate discomfort.
3. Fever may or may not be present.
4. A leukopenia is never present.
5. Diagnosis is made by making pressure over the swollen gland and milking it along Stensen's duct. A characteristic purulent material will extrude from the duct opening.

Course of Parotitis

1. The swelling of the parotid lasted from a few days to several weeks.
2. In only one instance did suppuration through the skin occur.
3. Recurrences occurred from two to ten or more times.
4. Upon culture of the purulent material from Stensen's duct, *Streptococcus viridans* was found in every instance; occasionally staphylocci and pneumococci were also present. Stones, calcifications, or obstructions, were never found in the ducts.
5. There is no specific therapy.
6. Surgery was never resorted to; sulfonamides were of no value.
7. Roentgenotherapy caused recession in those cases that were swollen for more than a week, but had little influence on recurrence.

—From *The Proceedings of the Institute of Medicine of Chicago* 15:419 (November 15) 1945.

JUSTI RESEARCH Suggests:

The new liquid ACRYNAMEL OPAQUE is finding routine use in all jacket crowns. Routinely paint stump allow to dry thoroughly pack and process jacket as usual

The above procedure eliminates influence of cement on shade of jacket, regardless of thickness

The wear, like natural teeth of acrylic teeth was first thought to be a disadvantage. It is now admittedly one of the main advantages of acrylic teeth.

Wear, like natural teeth, continuously balances occlusion Balanced occlusion thus obtained is infinitely superior to any mechanical articulator.

Balanced occlusion, constantly maintained, also maintains denture retention indefinitely.

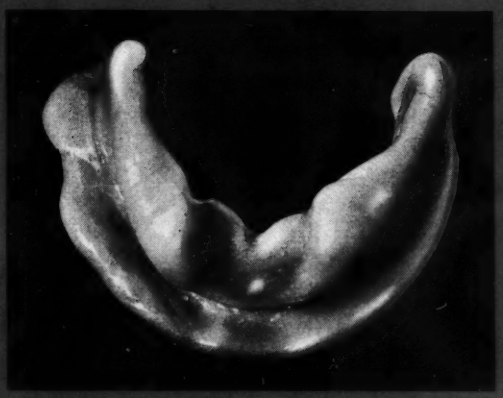
Denture retention lasts longer with acrylic teeth for the following reasons—Resilient occlusal impact eliminates transmission of shock to the tissues; minimizes trauma, alveolar absorption, all ridge change

MUCO-SEAL impression material plus MUCO-SEAL technique gives positive retention of the lower denture Acrylic teeth maintain this stability over a period of years, not just days or weeks

FOR POSITIVE RETENTION IN FULL DENTURES USE...

and

THE MUCO-SEAL LOWER DENTURE TECHNIQUE



SEND FOR PAPER ON COMPLETE MUCO-SEAL TECHNIQUE

Unconditionally Recommended

RESILIENT IMPACT Preserves THE RIDGE

INJECTION MOLDED DENTAL PEARL Cyclo-Mold PLASTIC TEETH

A PRODUCT OF JUSTI RESEARCH

for FULL DENTURES

NORMAL WEAR Maintains OCCLUSAL BALANCE

Products with a Single Purpose - Better Dentistry

H. D. JUSTI & SON, INC., PHILADELPHIA 4, PA. RELIABLE DENTAL PRODUCTS SINCE 1864

THE BRUSH WITH THE MOUTH-MIRROR ANGLE FOR TEETH THAT REFLECT BETTER CARE

DESIGNED by a practicing dentist with scientific regard for morphologic variation in dental arches. Helps to clean surfaces of abnormally tilted teeth, to evacuate impacted material in interproximal spaces, and to remove detritus from cervical regions. The Squibb Angle Toothbrush is hygienic and highly adaptable to any brushing technique. Easily handled. Long-wearing bristles—hard or medium.

SQUIBB *A name you can trust*

E. R. SQUIBB & SONS, N. Y.—MANUFACTURING CHEMISTS TO THE MEDICAL AND DENTAL PROFESSIONS SINCE 1858

Pulp Management in Deciduous Teeth

TRUMAN G. DEWITT, D.D.S.

TREATMENT of deciduous teeth with exposed pulps should be based on the clinical findings. If the exposed pulp is a result of exposure during either removal of caries or faulty instrumentation, there are four alternatives: Pulp capping, pulpotomy (partial pulpectomy), pulpectomy (complete removal of the pulp), or extraction. Before deciding on the treatment, certain cardinal factors should be considered:

1. General health.
2. Oral condition.
3. Condition of the apex.
4. Position of the fistula.
5. Age of patient.

Pulp Capping

The capping of pulps in deciduous teeth is usually unsuccessful and should not be used as a method of treatment of exposed pulps. This statement not only is my opinion but, from the review of literature, seems to be the opinion of the majority of men working in this field.

Pulpotomy

A pulpotomy may be defined as the removal of the pulp occupying the pulp chamber or slightly into the pulp canals.

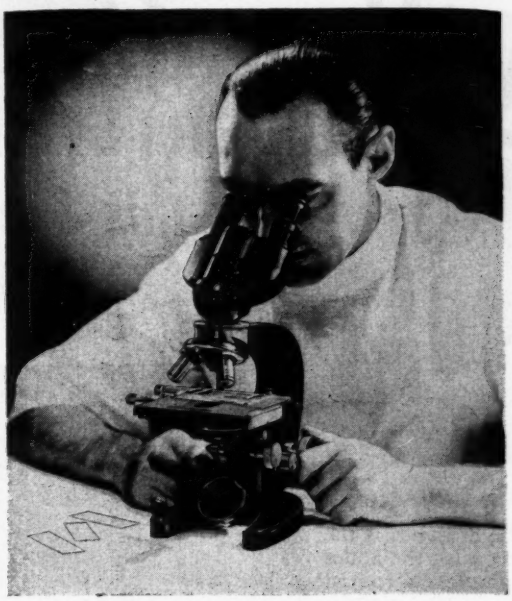
Diagnosis—The success or failure of a pulpotomy depends largely on a careful diagnosis. This should take into consideration not only the condition of the pulp but the general condition of the patient.

Roentgenograms should not show any evidence of necrotic tissue at the apex nor in the bifurcation, and the root should not be more than one third resorbed. The pulp must be vital and have a good blood supply and any area of congestion must be removed.

Technique—1. Give a local anesthetic.

2. Isolate the tooth with a rubber dam.

3. Remove the entire floor of the pulp chamber with a fissure bur.



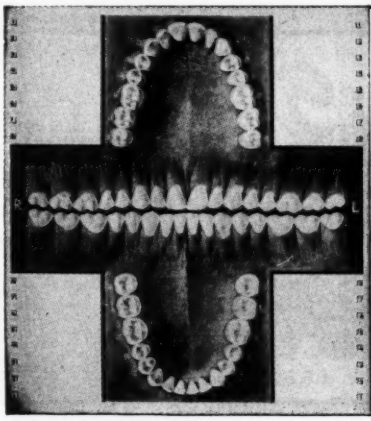
SCIENTIFICALLY GRADED KARAYA GUM USED IN FASTEETH

The most important single factor in the scientifically controlled FASTEETH manufacturing process is the careful selection of the exact grades of gum necessary for the most efficient degree of viscosity and consistency. The makers of FASTEETH will accept no other grades.

Try this alkaline, pleasantly flavored, denture powder among your patients. We feel sure that the degree of comfort and stability FASTEETH provides will convince you of its efficiency.

CLARK-CLEVELAND, INC., Binghamton, N. Y.

FASTEETH
Alkaline DENTURE POWDER



Permanent Records Are Important . . .

Do you have a permanent record of the mouth of each of your patients? This type of record is tremendously important, and easy to accomplish. Use the Ryan Treatment and Examination Chart as illustrated here. It is being widely used and is acclaimed the most practical chart for record purposes. Use it on *one case* . . . and you will want to use it on *every* case. The coupon is for your convenience.

The Dental Digest
1005 Liberty Ave., Pittsburgh 22, Pa.
Here is $1.00 for a pad of 50 Ryan Examination and Treatment Record Charts.

Dr. .....
Address .....
City .....

ONLY THE Castle STERILIZER Has this Special Boiler!

THE Castle Sterilizer is the *only* sterilizer with the boiler interior completely coated with block (virgin) tin. Its smooth, easy-to-clean surface withstands the corrosive action of boiling water and steam . . . prevents the chemical action that dulls and stains the instruments.

This heavy, "Cast-In-Bronze" Boiler, guaranteed for a lifetime against *any* defect, is just one of the many exclusive features that make the Castle Sterilizer the most economical buy for the dentist today. For full details, write: Wilmot Castle Co., 1109 University Ave., Rochester 7, N.Y.

Castle LIGHTS AND STERILIZERS

4. Remove the bulbous part of the pulp chamber with spoon excavators. The pulp chamber is now washed with chloramine-T solution to remove blood.

5. A round bur is used to remove the pulp from the entrance of the pulp canals. The bur should be of a size large enough to fit into the opening of the pulp canals, and should be rotated in reverse to prevent perforation of the tooth.

6. After the debris has been removed and the hemorrhage stopped, a zinc oxide-eugenol mix is placed over the pulp stump and the remainder of the cavity is filled with a thin mixture of cement to prevent pressure.

Pulpectomy

Diagnosis—When there is a carious exposure that has been open for some time, there is likely to be partial necrosis of the bulbous part of the pulp, perhaps extending into the canals. In such case a pulpotomy would not give satisfactory results inasmuch as the infected pulp stumps will probably die, leaving the infected necrotic tissue in the canals.

Technique—The following technique for complete removal of the pulp is recommended by Doctor Eliu Gerlade:

First Appointment: 1. Remove caries from the tooth, and seal in a sedative dressing of eugenol.

2. Make a roentgenographic examination.

Second Appointment: 1. Give a local anesthetic, provided that devi-

TRY LAVORIS

For the Children

The flavor and action please them

Children will easily learn to gargle with Lavoris

START THE PATIENT RIGHT...IT'S TO HER (AND YOUR) *Advantage*

MANY DENTISTS find it wise to show the patient (before leaving the office) how easy and safe it is to keep the new denture in perfect condition with POLIDENT. Many later complaints can thus be easily avoided . . . complaints of irritation from plates worn by brushing with abrasive cleaners, of offensive odor due to undissolved mucin plaques, and of unsightly discoloration. . . . Furthermore, the danger of chipping or breaking is materially reduced, because of the minimum handling necessary with POLIDENT.

HUDSON PRODUCTS, INC., JERSEY CITY 6, N. J.

SOAK

Soak 15 minutes in solution (or overnight)
(1 glass water to capful POLIDENT)

Hold under running water to rinse—
THAT'S ALL

RINSE

Approved for use by leading manufacturers of acrylic denture material.

DENTURES KEEP *fit* – WITH POLIDENT

talizing paste has not been sealed in previously.

2. Isolate the tooth with a rubber dam, and open the pulp chamber with a fissure bur. Remove the bulbous part with spoon excavators.

3. Remove the pulp from the canals with a fine barbed broach.

4. Enlarge the canals until a small gutta-percha point can be inserted.

5. Wash the pulp chamber and canals thoroughly with chloramine-T solution, and seal in a dressing of beechwood creosote on paper points with temporary stopping, filling the pulp chamber. Fill the remainder of the cavity with cement.

Third Appointment: 1. Isolate the tooth with a rubber dam.

2. Remove the dressing, wash and file the canals, and seal in beechwood creosote.

3. Seal the dressing in the tooth as before.

Fourth Appointment: 1. Remove the dressing; wash and dry the canals thoroughly. If the tooth has given no pain and has no putrescent odor, it is considered ready to fill.

2. Line the canals with Gysi's Treo-paste and insert a gutta-percha cone.

3. Fill the remainder of the cavity with cement; take a roentgenogram.

Extraction

Diagnosis—Whether it is decided to treat a tooth with an acute abscess, or to extract it, a correct diagnosis must be made and the patient given relief from pain.

If it is decided to save such a tooth, the treatment must be a pulpectomy. The usual technique is used except that it is obviously unnecessary to use devitalizing paste or a local anesthetic. As a word of warning, never insert a file or broach into the canal at the first appointment.

Oftentimes the pulp dies under a filling. The tooth is sore to percussion and seems longer than the rest of the teeth. There may or may not be swelling.

Treatment—1. A small round bur or a small tapering fissure bur is excellent for establishing drainage. After the pulp chamber has been penetrated, there may be only a slight hemorrhage, or purulent exudate, or at times there will be neither; however, at least the gases are allowed to escape. Relief usually follows.

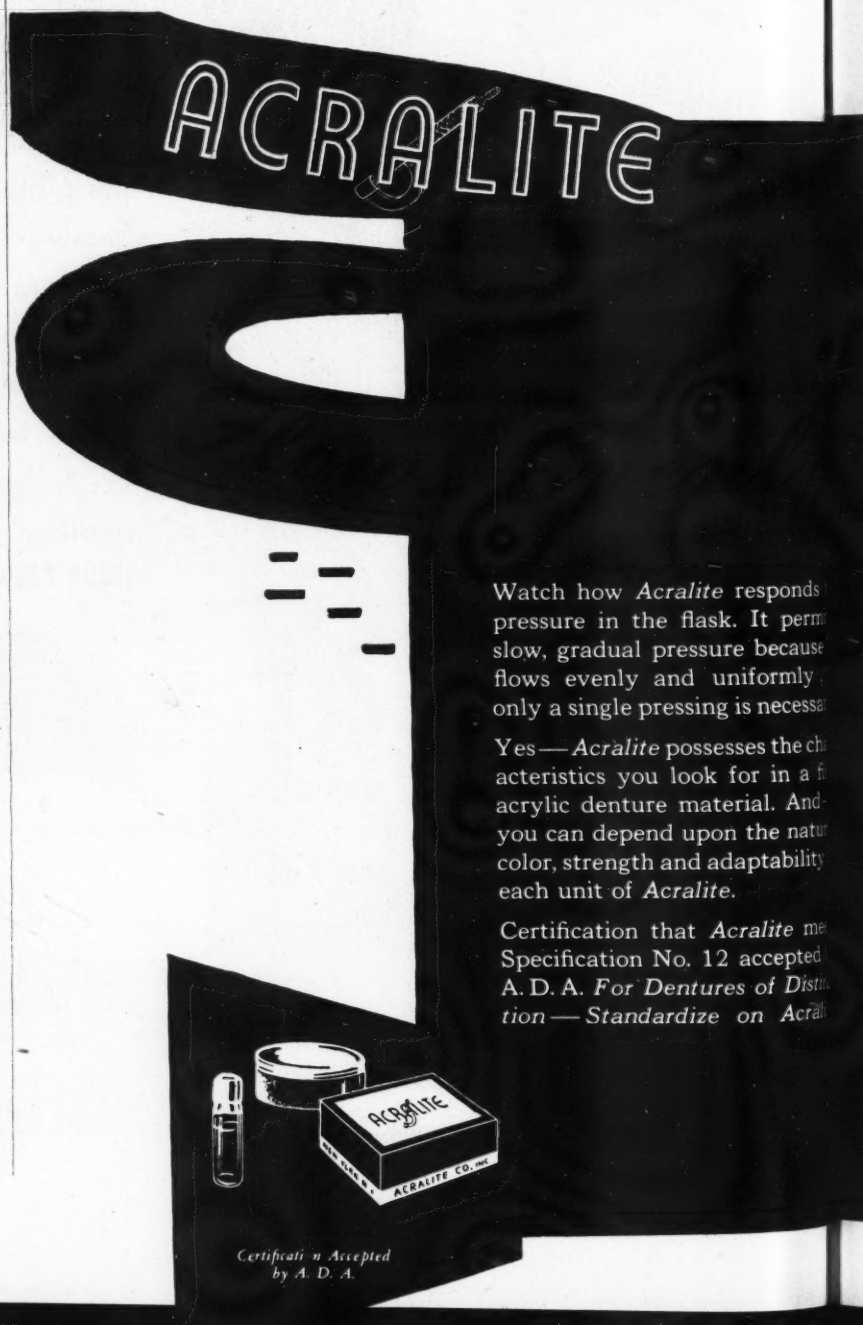
2. After drainage has been established, secure a roentgenogram to help determine whether to treat or extract the tooth.

3. It is probably advisable, in most instances, to extract the tooth after soreness and swelling have subsided. I do not advise extraction nor any other treatment as routine inasmuch as proper diagnosis is necessary for each individual case.

—From *Illinois Dental Journal* 14:429 (October-November) 1945.

Fluorine Content and the Incidence of Dental Caries

The South African Medical Journal for August 12, 1944, gave an informative study of 78,563 South African school children by Ockerse of the Department of Health. Their survey on "hard" and "soft" waters presents a new angle. Ockerse found that high pH or "hard" or alkaline waters tended to produce low caries rates. The combination of 1 or 2 parts per million of fluorine plus high pH served

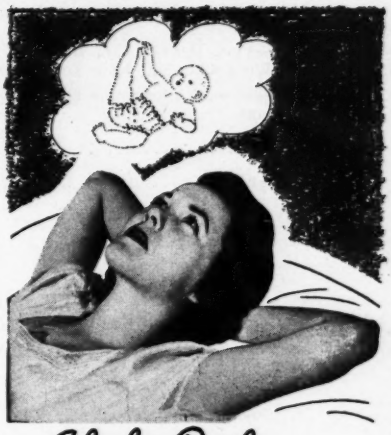

ACRALITE
Watch how Acralite responds
pressure in the flask. It perm
slow, gradual pressure because
flows evenly and uniformly
only a single pressing is necessa
Yes — Acralite possesses the ch
acteristics you look for in a
acrylic denture material. And
you can depend upon the natu
color, strength and adaptability
each unit of Acralite.
Certification that Acralite m
Specification No. 12 accepted
A. D. A. For Dentures of Distin
tion — Standardize on Acral
ACRALITE
ACRALITE CO. INC.
Certificati n Accepted
by A. D. A.

to give the greatest immunity from caries.

In some 3,000 children showing mottled enamel, only 28 per cent had any dental caries, compared with 80 per cent and more among those showing no mottling. Fluorine influences the function of the ameloblasts and odontoblasts during calcification of the teeth from the fifth month "in utero" until eight years after birth.

As an acid media favors the growth of oral bacteria, mainly *Lactobacillus acidophilus,* causing dental caries, the possibility of acid (soft) drinking water assisting the process of dental caries must not be overlooked. Hard drinking waters are usually alkaline and serve to reduce the caries rate. —From *The New York Journal of Dentistry* 15:368 (December) 1945.

GIVE TO THE RED CROSS



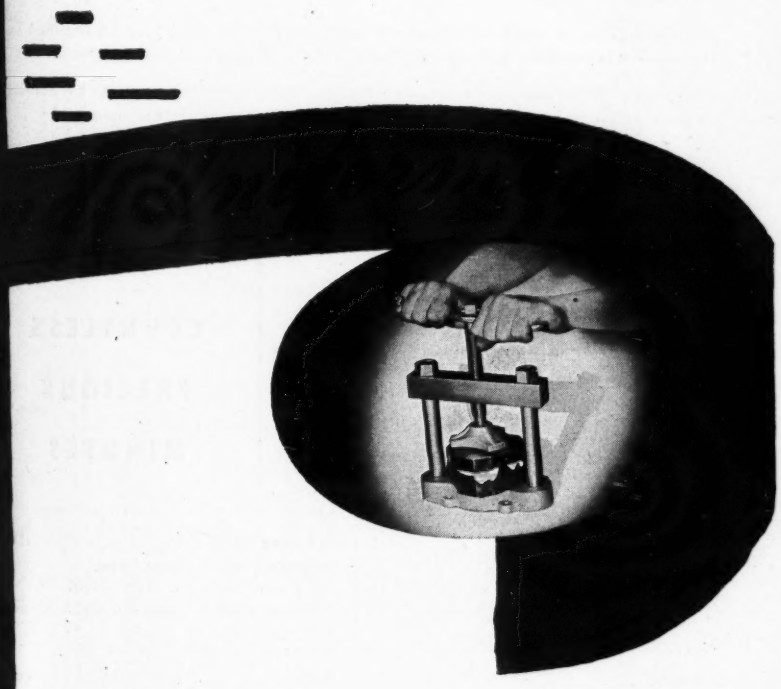
Alpha-Perles

Containing Chlorophyllin compound, biologically standardized Vitamin D concentrate, together with a proper balance of Calcium, Phosphorous and Colloidol Iron, ALPHA PERLES is beneficial and many times corrective when prescribed as a supplementary diet.

Alpha Perles are indicated for pregnant and lactating mothers to meet the demands for an abundant supply of calcium, phosphorous and iron; provides essential elements necessary to the building and proper maintenance of healthy tooth structure.

Simple to take, readily assimilable, Alpha Perles—the *medicinal food,* overcomes dietary deficiencies. Write today for complete literature and clinical evidence.

HARRY J. BOSWORTH COMPANY
1315 S. MICHIGAN AVENUE · CHICAGO



Others Have Tried BS POLISHERS Why Not You?

Many dentists have sent in the coupon below and found out why BS Polishers are preferred over many others. They can readily understand why this soft, flexible rubber polisher makes a patient feel safe and comfortable, also why it is easy for it to clean and polish every tooth to a lustre brightness. Why don't you find out these facts for yourself? Send the coupon in now!

BS POLISHERS ARE SMALLER AND MORE CONVENIENT TO USE

Young Dental Mfg. Co.
St. Louis 8, Mo.
Gentlemen:
Without any obligation send us one of your BS POLISHERS — ABSOLUTELY FREE.
NAME .....
ADDRESS .....
CITY .....
STATE .....

ACRALITE CO. INC. NEW YORK 18, N. Y.

See page 57 D.D.2

INTERSTATE DENTAL CO., INC.
220 WEST 42ND ST., NEW YORK CITY

Please send information concerning your products.

Dr. .....

Address .....

City .....

See pages 58-59 D.D.2

VERNON-BENSHOFF CO.
P. O. BOX 1587, PITTSBURGH 30, PA.

Please send Vernonite information.

Dr. .....

Address .....

City .....

See pages 60-95 D.D.2

COOK-WAITE LABORATORIES, INC.
170 VARICK ST., NEW YORK 13, N. Y.

Please send information concerning your products.

Dr. .....

Address .....

City .....

See page 60 D.D.2

THE MU-COL CO., DEPT. DD26
BUFFALO 3, N. Y.

Please send samples.

Dr. .....

Address .....

City .....

See page 61 D.D.2

KONFORMAX DIVISION
PERMATEX CO., INC., BROOKLYN 29, N. Y.

Please send folder mentioned in ad.

Dr. .....

Address .....

City .....

See pages 62-63 D.D.2

WERNET DENTAL MFG. CO., DEPT. 16B
190 BALDWIN AVENUE, JERSEY CITY, N. J.

Please send samples of Wernet's Powder.

Dr. .....

Address .....

City .....

See pages 64-65 D.D.2

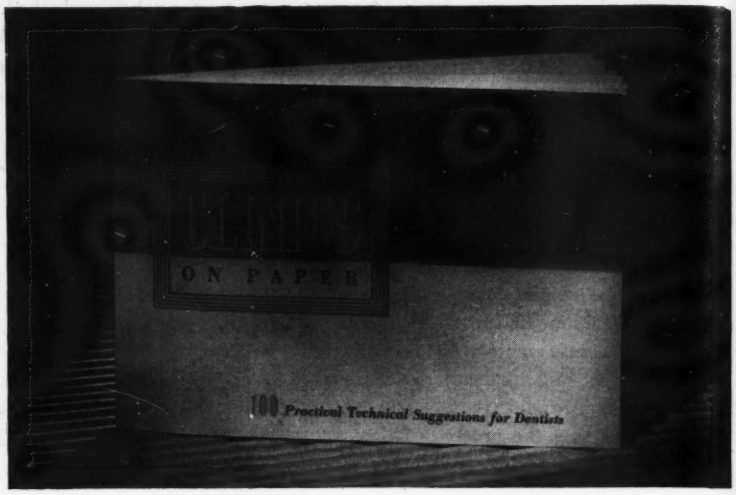
UNION CARBIDE & CARBON CORP., DEPT. DP6
30 EAST 42ND ST., NEW YORK 17, N. Y.

Please send full color reproduction of painting mentioned in ad.

Dr. .....

Address .....

City .....



100 EASIER WAYS . . . *at the chair, in the laboratory*

Hundreds of copies of CLINICS ON PAPER have been purchased by practitioners throughout the country since this new booklet was announced a short time ago.

What it is: CLINICS ON PAPER is a 64-page booklet printed attractively in two colors. It presents 100 practical methods . . . 100 easier ways to do things, at the chair and in your laboratory.

Each suggestion is skillfully illustrated so that text is reduced to a minimum. Too, the booklet is carefully indexed; and colored tabs designate various subjects.

The prices: $1.00 per copy to regular Dental Digest subscribers; $2.00 to non-subscribers unless purchased in combination with a subscription (see coupon).

The coupon is for your convenience in entering an order now. A single idea in this booklet can be worth much more to you than the small investment involved.

The Dental Digest
1005 Liberty Avenue, Pittsburgh 22, Pa.

☐ Here is $1.00 for a copy of the new book CLINICS ON PAPER. I am a regular subscriber.

☐ I am not a subscriber. Please enter my subscription to The Dental Digest for eight months and send CLINICS ON PAPER at special $2.50 combination price.

Dr. .....

Address .....

Dealer .....

SAVE COUNTLESS PRECIOUS MINUTES

See page 101 D.D.2

COREGA CHEMICAL CO.
208 ST. CLAIR AVE., N.W., CLEVELAND 13, O.

Please send samples for patients.

Dr. .....

Address .....

City .....

See pages 102-103 D.D.2

J. F. JELENKO & CO., INC.
136 WEST 52ND ST., NEW YORK 19, N. Y.

Please send information concerning your products.

Dr. .....

Address .....

City .....

See page 103 D.D.2

COLUMBIA DENTOFORM CORP.
131 EAST 23RD ST., NEW YORK 10, N. Y.

Please send literature mentioned in ad.

Dr. .....

Address .....

City .....

See page 104 D.D.2

AUSTENAL LABORATORIES, INC.
5932 WENTWORTH AVE., CHICAGO, ILL.

Please send name of nearest Vitallium laboratory.

Dr. .....

Address .....

City .....